TECHNICAL MEMORANDUM

TO: Greg Morrill, Bergerson Construction

FROM: Brad Thiele, Northwest Environmental Consulting, LLC

DATE: July 20, 2024

SUBJECT: Marine Mammal Monitoring Plan

PROJECT: U.S. Coast Guard Fast Rescue Cutter Homeport, Astoria, Oregon

INTRODUCTION

This final report compiles the comprehensive marine mammal monitoring efforts undertaken for the U.S. Coast Guard FRC Homeport Project as part of an Incidental Harassment Authorization (IHA) and compliance with the Endangered species Act (ESA) and Marine Mammal Protection Act (MMPA).

The project included removal of Pier 6. Pier 6 was a 1,500-foot long by 30-foot wide, 45,000 square foot over water structure. Pile work included removal of creosote treated timber fender pile and approximately 396 steel H piles.

A new 250-foot by 40-foot precast concrete panel pier with a cast-in-place concrete topping slab was constructed. The new pier included pile installation of approximately 60, 30-inch diameter hollow steel pipe piles and approximately 40 24-inch steel pipe guide piles for the new floating docks.

The pile work included vibratory pile removal and installation as well as impact pile driving. The pile driving activities produce underwater sound that may be harmful to marine mammals. Marine mammals are considered harassed when exposed to elevated sound levels that may lead to mortality temporary or permanent hearing impairment (threshold shift), non-auditory effects, and behavioral disturbance. NMFS has developed acoustic thresholds that identify the received level of underwater sound from explosive and non-explosive sources above which exposed marine mammals would be expected to:

- Be behaviorally disturbed or incur a temporary threshold shift (TTS), both of which qualify for Level B harassment under the MMPA (Marine Mammal Protection Act) or;
- Incur a permanent threshold shift (PTS) of some degree of lung or gastrointestinal tract injury, both of which qualify for Level A harassment.

This completion report summarizes the marine mammal monitoring effort and documented take as observed by the marine mammal monitoring crew performed by Northwest Environmental Consulting (NWEC).



ZONES

The IHA request identified zones for inwater noise monitoring areas. These include two activities, one for impact hammer installation of pilings and the other for vibratory hammer removal of pilings.

	IMPACT HAMMER	See Figure 1	VIBRATORY HAMMER	See Figure 2
Hearing Group	Level A Exclusion Zone (meters)	Level B Harrasment Zone (meters)	Level A Exclusion Zone (meters)	Level B Harrasment Zone (meters)
HF Cetaceans	287	602	1.2	1359
Phocid Pinnipeds	197	602	0.5	1359
Otariid Pinnipeds	-	602	-	1359

Table 1 – Level A Exclusion Zones and Level B Harassment Zones for Impact PileDriving

PROJECT TEAM AND MONITORING LOCATIONS

NWEC employed Protected Species Observers (PSOs) for all required marine mammal monitoring. The daily PSO team consisted of two monitors, stationed strategically to survey the survey area continuously during all pile work. The lead monitor on-site, was in contact with the project manager at all times, and oversaw the schedule and training for the on-call monitors. The monitors included Erica Long-Bobian (EL), Kelsey Nelson (KN), Kayla Walser (KW), Daniel Whal (DW), Kristine De Wilde (KD), Jonathan Calleja (JC), Brad Thiele (BT), Bill McQueen (BM), and Keeley Rideout (KR). (See attached resumes in Appendix C - Resumes).

MITIGATION METHODS IMPLEMENTED

All monitoring protocols were followed in accordance with the Marine Mammal Monitoring Plan (Appendix A) and IHA protocols for the project.

PSOs were at designated monitoring locations during pile removal or installation. Monitoring was conducted 30 minutes prior to pile driving initiation and continued for 30 minutes post-completion of pile driving. Any observed marine mammal within the designated shutdown zones prompted immediate halting or delay of pile driving activities, in accordance with the IHA requirements.

SIGHTINGS AND TAKES

The Marine Mammal Protection Act (MMPA) defines "harassment" as: "any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of



behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but that does not have the potential to injure a marine mammal" [Level B harassment]. Pile driving/removal can generate underwater noise that potentially could result in Level A (injury) or Level B (behavioral harassment) to marine mammals swimming by or near the project site. Any marine mammal that was harassed is determined as a Take under the MMPA. Any marine mammal that was observed in the shutdown zone during pile driving was be considered as a Level A Take. Any marine mammal that was observed in the Level B harrassment zone during pile driving was be considered as a Level B Take.

Sighting locations were recorded in a grid. Take was summarized daily and recorded in the daily reports in Appendix B. Observers determined Take to occur when an animal was sighted in the water during pile driving activity and included animals outside of the SDZ. Efforts were made to avoid marking take on the same animal per day and not record repeat sightings if animals observed were likely the seen in the same area recently. Daily summaries are included in Table 2 – Daily Summary. For more detailed information on sightings or take, see Appendix B – Daily Summary Forms.

SUMMARY

Marine Mammal Monitoring was performed as required for the project. A total of 14 harbor heals, 19 California sea lions, and 3 harbor porpoises were within the Level B harassment zone during pile driving. A total of 1 harbor seals surfaced in the shutdown zone and immediately shutdown zone during pile driving and was recorded as a Level A Take.

REFERENCES

National Marine Fisheries Service. 2018. 2018 Revisions to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts. U.S. Dept. of Commerce, NOAA. NOAA Technical Memorandum NMFS-OPR-59, 167 p.



Table 2 - Daily Summary

Table 2	: - Daily S	ummary									
			Observation	1	Sightings/	Species**		Take			
Date	Observers	Activities	Time	Visibility*	HS	CASL	Other	HS	CASL	Other	Notes
8/21/23	EL, KN	Timber pile removal	8:41-14:07	E	2						Sigbting before pile work
8/25/23	EL, DW	Timber pile removal	8:00-15:10	E	4						Sigbting before pile work
9/13/23	MP, DW, BT	Timber pile removal	8:01-15:40	E	7	4					3 Shutdowns to avoid take - Fishing nets out
9/14/23	EL, MP	Timber pile removal	8:07- 15:20	P-E	24						2 Shutdowns to avoid take - Fishing nets out
9/15/24	EL, MP	Timber pile removal	7:36-13:52	G	18	1					1 Shutdown to avoid take - Fishing nets out
11/28/24	EL, KW	Steel Pile Removal	8:27-12:45	E							No sightings
11/30/24	EL, KW	Steel Pile Removal	7:33-16:17	G							No sightings
12/11/23	EL, JC	Steel Pile Removal	7:50-14:10	Р	1						Sigbting between pile work
12/14/23	EL, BT	Steel Pile Removal	8:20-16:20	Р							No sightings
12/18/23	EL, KD	Steel Pile Removal	8:13-16:12	М							No sightings
12/19/23	EL, KD	Steel Pile Removal	7:26-16;17	Е							No sightings
12/20/23	EL, KD	Steel Pile Removal	7:30-16:25	Р	1						Shut down during fog
12/21/23	EL,DW	Steel Pile Removal	7:47-15:40	Р							No sightings
12/27/23	EL, KW	Steel Pile Removal	7:48-16:20	М							No sightings
12/28/23	EL, DW	Steel Pile Removal	7:43-4:13	E							No sightings
1/4/24	EL, KN	Pile installation	7:45-16:50	М							No sightings
1/11/24	EL, KN	Pile installation	9:35-16:06	E							No sightings
1/12/24	EL, KN	Pile installation	9:34-16:06	Е		1					No work at time of sighting
1/18/24	EL, KN	Pile installation	7:57-14:28	Р							No sightings
1/19/24	EL, KN	Pile installation	9:30-12:30	Р							No sightings
1/22/24	EL, KN	Pile installation	8:10-16:04	Р							No sightings
1/23/24	EL, KN	Pile installation	7:54-11:46	М	5	1		5	1		1 HS Level A take - Observed leaving area
1/30/24	EL, KN	Pile installation	7:46-12:29	G							No sightings
1/31/24	EL, KN	Pile installation	7:32-13:28	М							No sightings
2/5/24	EL, KN	Pile installation	7:50-15:28	Μ							No sightings
2/6/24	EL, KN	Pile installation	8:06-15:46	Р		1					No work at time of sighting
2/7/24	EL, KN	Pile installation	7:48-15:00	Р		2					No work at time of sighting
2/8/24	EL, KN	Pile installation	8:31-14:58	Μ							No sightings
2/9/24	EL, KN	Pile installation	8:02-16:16	Μ							No sightings
2/12/24	EL, KN	Pile installation	8:04-15:56	Μ							No sightings
2/13/24	EL, KN	Pile installation	8:02-11:05	Р							No sightings
2/15/24	EL, KN	Pile installation	7:55-16:19	Е		1					No work at time of sighting
2/16/24	EL, KN	Pile installation	7:55-15:30	М							No sightings
2/19/24	EL, KN	Pile installation	9:03-14:04	Μ							No sightings
2/20/24	EL, KN	Pile installation	7:39-15:25	М		3			2		Level B takes
2/21/24	EL, KN	Pile installation	7:40-15:48	М							No sightings
2/23/24	EL, KN	Pile installation	7:48-15:03	Е							No sightings
2/26/24	EL, KN	Pile installation	8:03-14:00	E							No sightings
2/28/24	KN, MP	Pile installation	7:58-16:48	P-M							No sightings
2/29/24	KN, MP	Pile installation	7:34-16:16	Μ							No sightings

3/1/24	KN, MP	Pile installation	7:32-15:04	Е							No sightings
3/4/24	EL, KN	Pile installation	8:03-16:50	Μ		6			2		Level B takes
3/5/24	EL, MP	Pile installation	8:05-9:35	М		2			2		Level B takes
3/7/24	EL, MP	Pile installation	8:55-10:40	Р		6			6		Level B takes
3/8/24	EL, MP	Pile installation	7:40-15:50	G							No sightings
3/12/24	EL, MP	Pile installation	7:31-15:20	Р							No sightings
3/13/24	EL	Pile installation	7:57-10:18	Е							No sightings
5/13/24	BT, BM	Steel Pile Removal	7:35-25:10	Е							No sightings
5/14/24	BT, BM	Steel Pile Removal	7:25-14:45	Е							No sightings
5/15/24	BM, JC	Steel Pile Removal	7:20-14:49	Е	2			1			Level B take
5/16/24	KR, KD	Steel Pile Removal	7:50-14:44	Е	1			1			Level B take - milling in area most of day
5/17/24	EB, KR	Steel Pile Removal	7:21-14:49	Е	4			3			Level B takes
5/20/24	KR, BM	Steel Pile Removal	7:15-12:58	Е	2	2	3 HP	2	2	3 HP	Level B takes
5/21/24	KR, BM	Steel Pile Removal	7:15-14:47	Р	2	1		2	1		Level B takes
5/22/24	BT, KR	Steel Pile Removal	7:12-14:59	Е		3			2		Level B takes
5/23/24	ВТ	Steel Pile Removal	7:05-14:40	Е		1			1		Level B take
5/24/24	EB, BT	Steel Pile Removal	7:12-9:32	Е							No sightings
		Totals			73	35	3	14	19	3	

** B Bad (<0.5km) P Poor (0.5 - 1.5km) M Moderate (1.5 - 10km) G Good (10-15km) E Excellent (<15km) * HS - Harbor seal: CS - California Sealion: SS - Stellar Sea lion: HP - Harbor porpoise

Attachment A: Marine Mammal Monitoring Plan

TECHNICAL MEMORANDUM

W Northwest Environmental Consulting, LLC

TO: Greg Morrill, Bergerson Construction
FROM: Brad Thiele, Northwest Environmental Consulting, LLC
DATE: Aug 9, 2023
SUBJECT: Marine Mammal Monitoring Plan
PROJECT: U.S Coast Guard FRC Astoria

INTRODUCTION

The U.S. Coast Guard is proposing to remove Pier 6. Pier 6 is a 1,500-foot by 30-foot structure. The proposal will remove the existing 45,000 square feet of existing decking, bracing, and fendering, in addition to approximately 396 steel H piles and creosote or salt treated pier pilings.

A new 250-foot by 40-foot precast concrete panel pier with a cast-in-place concrete topping slab will be constructed. It is anticipated that the new pier will be supported by 60, 30-inch diameter hollow steel pipe piles. Up to four 200-foot by 15-foot floating docks will be constructed and installed adjacent to the newly constructed pier on ten 24-inch steel pipe guide piles (40 total 24-inch piles).

This work will include vibratory pile removal and installation as well as impact pile driving. These activities will produce underwater sound that may be harmful to marine mammals. Marine mammals are considered harassed when exposed to elevated sound levels that may lead to mortality temporary or permanent hearing impairment (threshold shift), non-auditory effects, and behavioral disturbance. NMFS has developed acoustic thresholds that identify the received level of underwater sound from explosive and non-explosive sources above which exposed marine mammals would be expected to:

- Be behaviorally disturbed or incur a temporary threshold shift (TTS), both of which qualify for Level B harassment under the MMPA (Marine Mammal Protection Act) or;
- Incur a permanent threshold shift (PTS) of some degree of lung or gastrointestinal tract injury, both of which qualify for Level A harassment.

This memo describes the monitoring area and methods used to adhere to the requirements of the Marine Mammal Protection Act (MMPA). An IHA (Incidental Harassment Authorization) was requested for review, but NMFS has not concurred with these findings as of the date of this memo.

ZONES

The IHA request identified zones for inwater noise monitoring areas. These include two activities, one for impact hammer installation of pilings and the other for vibratory

1



hammer removal of pilings. We assume the zones will be the same for vibratory installation as well.

	IMPACT HAMMER	See Figure 1	VIBRATORY HAMMER	See Figure 2
Hearing Group	Level A Exclusion Zone (meters)	Level B Harrasment Zone (meters)	Level A Exclusion Zone (meters)	Level B Harrasment Zone (meters)
HF Cetaceans	287	602	1.2	1359
Phocid Pinnipeds	197	602	0.5	1359
Otariid Pinnipeds	-	602	-	1359

Table 1 – Level A Exclusion Zones and Level B Harassment Zones for Impact Pile Driving

Pile installation or removal will not be initiated, or if initiated will be temporarily ceased, if marine mammals are within the Level A or Level B Harassment Zones, defined in the IHA request and shown in this document.

The following measures to ensure protection of marine mammals is proposed:

- Two marine mammal observers (qualified based on the National Marine Fisheries Service (NMFS) approved criteria listed below) will be placed at a location that provides unobstructed visual coverage of the Monitoring Zones to monitor for the presence of marine mammals during all in-water vibratory pile driving, removal and impact pile driving. This location will ideally be one observer from shore on the pier south of the project and one observer from a boat on the north side of the project area. Two observers can work from shore if conditions do not allow for observation from the water or if a boat is temporarily not available.
- Additional monitors may be added if necessary if visual observation of the monitoring areas is reduced by fog or other inclement weather conditions.
- Monitors shall be in close communication with the Contractor's Superintendent by cell phone or radio.
- The marine mammal observers will monitor their areas using binoculars and/or a spotting scope and with the unaided eye 20 minutes prior to in-water pile driving and for the duration of in-water pile driving. At least one monitor shall cover the area for 20 minutes post pile driving work.
- Monitoring times will be closely coordinated by the lead monitor and the Contractor's Superintendent. Monitoring will start once visibility allows. All pile driving and monitoring will be finished by sunset. Pile driving will not start when it



is too dark or conditions do not allow for adequate coverage of the monitoring zone as determined in the field.

- In the event that marine mammals are observed to enter the waters within the monitoring area, the observer will immediately notify the Contractor's Superintendent who will ensure that all in-water pile driving ceases immediately. Cessation of in-water pile driving will last until all marine mammals have moved outside the monitoring area.
- If the marine mammal has not been sighted for a period of 30 minutes within the monitoring zone, it is assumed that the species has left the area and pile driving can resume.
- If the species of the marine mammal cannot be determined then pile driving activities will be postponed until a positive identification can be made, or 30 minutes have passed since the mammal has been sighted.
- The observers will record all observations on data sheets or in log that can be used to complete summary data sheets. The data will be recorded to allow for an estimate of take per the IHA plan.

Minimum Qualifications for Marine Mammal Observers

- Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the waters surface with ability to estimate target size and distance. Use of binoculars may be necessary to correctly identify the target.
- Advanced education in biological science, wildlife management, mammalogy or related fields (bachelor's degree or higher is preferred) or equivalent experience or training in the field identification of marine mammals (cetaceans and pinnipeds).
- Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).
- Sufficient training, orientation, or experience with construction operation to provide for personal safety during observations.
- Writing skills sufficient to prepare a report of observations.
- Ability to maintain frequent communication orally, by radio, cell phone, or in person, with project personnel to provide real time information on marine mammals observed in the area, as necessary.

REFERENCES

National Marine Fisheries Service. 2018. 2018 Revisions to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts. U.S. Dept. of Commerce, NOAA. NOAA Technical Memorandum NMFS-OPR-59, 167 p.



Attachment A: Monitoring Zones













Attachment B: Daily Summary Sheets

Description: Timber fender pile removal Location: North side of pier, near shore Conditions: Excellent visibility Monitors: Erica Long-Bobian (pier 7), Kelsey Nelson (pier 1)

Very minimal marine mammal activity on this day. After the initial pre-monitoring period, there were no further marine mammal sightings. Visibility conditions were clear and there was no recreational fishing activity.

Time	#	Quad	Number	Species	Behavior/construction activity
8:41					PRE 30 min observation
8:52	1	E3	1	HS	Milling
8:55-9:02	2	F3-D5	1	HS	Looking, swimming SW. Possibly the same HS
9:32					VHON/OFF Intermittently
11:15					VHOFF
12:13					VHON/OFF Intermittently
14:07					End of construction
14:07					KN to POST observation

Description: Timber fender pile removal Location: Proximal to shore, North side Conditions: Excellent visibility Monitors: Erica Long-Bobian (pier 7), Daniel Wahl (pier 1)

Minimal marine mammal activity on this day, only sighted before construction began. Visibility conditions were clear and there was no recreational fishing activity.

Time	#	Quad	Number	Species	Behavior/construction activity
8:00					Construction waiting on vibro hammer transport
8:18-8:35	1	E6-D9	1	HS	Swimming S, not during observation window
8:24	2	C12	1	HS	Traveling
8:40-9:03	3	F10-E9	2	HS	Milling & Swimming
9:55					VHON/VHOFF Intermittently
10:36					Monitors take turns taking a break while other observes
10:48					VHOFF
11:30					VHON/VHOFF Intermittently
15:08					Construction done
15:10					POST observation

Date: 9/13/2023

Description: Timber fender pile removal Location: Mid-pier North side

Conditions: Excellent visibility

Monitors: Mary Powers (Pier 7, Pier 6), Daniel Wahl AM (pier 1), Brad Thiele PM (pier 1)

Lead monitor ELB unavailable this day; observer MP filled in the role as lead monitor. Per notes: Observer MP initially was stationed on the end of pier 7 and was instructed to move to pier 6 for accessibility permissions. Mid day second observer DW was relieved by BT, filling in from Seattle. Abundant fish run brought gillnetter activity to the monitoring area, which likely affected marine mammal activity. Significantly more sightings occured this day than the previous two monitored shifts on 8/21 and 8/25. Harbor seal sightings and shutdowns occured throughout the day.

Time	#	Quad	Number	Species	Behavior/construction activity
8:01					PRE observation 20 min
8:17	1	D6	1	HS	PRE began at 8:01. Traveling E
8:22		E4	1	HS	Milling, last sighted at 8:30
8:50		C7	1	HS	Looking, possibly the same sealion. Construction cleared to commence at 9:10
9:13-9:41					Use of crane to pull pile
9:41-9:45		E8	1	HS	MP called for a shutdown, cleared at 10:15
10:30					Switched to vibro hammer, VHON/OFF Intermittently
11:11		C11	1	HS	Traveling
11:30					BT relieving DW of observing at Pier 1
12:05-12:11					Milling, VH was on
12:05		C7	1	HS	Shut Down
12:31					VHON/OFF intermittently
12:51-13:12		C6	1	HS	Milling, likely same HS
12:51					Shut Down
12:52-12:58		E4-E2	1	HS	Traveling
13:18					VHON/OFF intermittently
13:50-14:06		D8-D12	1	HS	Barge Moving. Looking MP called for a VH shutdown.
13:50					Shut Down
14:10					VHON/OFF intermittently
15:18					Sawing pile
15:28		B8	1	HS	Milling, MP Called for shutdown, work day ended at this time.
15:40		D9	1	HS	BT reports HS milling, no construction at this time. POST

Description: Timber fender pile removal

Location: South side of pier 1, distal end of pier

Conditions: Heavy fog in the early morning, sun late morning into afternoon

Monitors: Erica Long-Bobian (pier 6) & Mary Powers (skiff, pier 1)

The day started with bad visibility due to heavy fog; had MP use a skiff to monitor the exclusion zone to mitigate visibility distance. Gillnetters fishing in the area kept harbor seals close behind their nets throughout the morning, shutting down construction twice. Sightings decreased as fishing boats left the area and visibility cleared mid-day. Construction started near the end of the south side of the pier and ended proximal to the shore on the same side. Overall, the fog did not create a large delay in construction, but there was at least 1.8 hours of shutdown time due to seal activity within the monitoring zone.

Time	#	Quad	Number	Species	Behavior/construction activity
8:07					PRE: Heavy fog, MP to use skiff to monitor across exclusion zone to mitigate visibility concern.
8:14-8:50	2	E11-G12	1	HS	Looking, traveling E
8:14	1	E9	2	HS	Shadowing fishing gear
8:20	1	E10	3	HS	3rd confirmed HS in same area, milling
8:31-8:50	1	f12	4	HS	Looking around
8:35-8:44	1	D9	5	HS	Looking
9:12					Vis moderate, MP moved to P1, construction cleared
9:24					VHON/OFF intermittently
9:33	1	C7	6	HS	Shutdown, Looking around, traveled E
9:43					Barge moved to mid pier, cleared for construction at 9:53
9:59-11:28					VHON/OFF intermittently
17:27	1	D8	7	HS	Milling, no VH work
11:30					MP to go on break, ELB covered watch
11:58	1	C7	8	HS	Milling, no VH work
12:28	1	D8	9	HS	Shutdown, Traveling E
12:28	1	F11	10	HS	Milling
12:36-12:49	1	C7-D6	11	HS	Milling, possibly the same in D8
12:44-12:49	2	E6	12	HS	Milling
12:44	1	F6	13	HS	Milling, seen at the same time as others. Construction switched to crane pulling
12:58	1	D7-D6	14	HS	Swimming
13:04	1	E4	15	HS	VHON clearance based on HS from sighting 11 swimming away from harassment zone, far enough away to avoid shutdown but consider a take (0.75 mi > away)
13:14	1	E7	16	HS	Traveling S, hear two fishing boats
13:21					Moved barge, proximal to shore, S side of pier. VHON/OFF intermittently

13:32	1	D12	17	HS	Swimming N
13:55	1	E4	18	HS	Looking, VHOFF at the time, assumed to still be in the area
14:04					Moving barge, proximal to shore, S side of pier. Removed VH, crane pulling
14:09	1	F3	19	HS	Looking, no construction occurring
14:40	1	D7	20	HS	Looking, sawing piles
15:00	1	D12	21	HS	Swimming, VHON
15:09					VHOFF, moving barge proximal to shore. End of VH use
15:10-15:30					MP POST op 20 min
15:20	1	E9	22	HS	POST, Looking

Description: Timber fender pile removal

Location: South side of pier 1, proximal to the shore Conditions: Visibility good throughout day, sunny, windy in the afternoon Monitors: Erica Long-Bobian (pier 6) & Mary Powers (pier 1)

Shift summary: During the pre-construction monitor period, there was significant delay due to multiple harbor seals within the monitoring zone (1.65 hr). The seals were following two gillnetters in the area, with the gillnetters leaving the area around 1pm. Shutdown times were changed to 15 minute minimums per a conversation with Adam N, following a consultation with the environmental consultant. It was clarified that observers may record sightings of marine mammals in the monitoring zone, and only need to shut down if marine mammals are approaching the immediate vicinity of construction (~200 m). There was a single 15 minute shutdown for a harbor seal at 9:17 am, totalling almost 2 hours of delay for the day. Vibritory work on the pier timber piles finished around 1:30 pm, which the barge then relocated to onshore timber pile extraction. A pipe being treated for asbestos had burst and I was standing about 20 m downwind; I was informed that I was potentially exposed to the asbestos (1:45 pm).

Time	#	Quad	Number	Species	Behavior/construction activity
7:36					Start PRE 20 min
7:44	1	C9	1	HS	Milling
7:53-8:42	2	B12-D11	1	HS	Looking
7:56-8:22	3	E5-D8	1	HS	Swimming E, Swam to D8
8:04	4	E3	1	HS	Milling
8:05-8:44	5	D8-C7-C8	1	HS	Traveling from D8 to C7, gillnetter fired two warning shots to deter HS. Traveling to C8.
8:15-8:31	6	D5	2	HS	Swimming W
8:28-8:50	7	D7	2	HS	Swimming
8:37-8:55	8	D8	1	HS	Milling, Swimming S
8:46	9	D10	1	HS	Confirmed 2nd seal near S shore, swimming
9:15					VHON/OFF Intermittently
9:17-9:30	10	B8	1	HS	Shutdown - Swimming towards shore/B7
9:30	11	E11	1	HS	Swimming NW
9:45					Changing to 15 minute shutdown per conversation w/ AN. VHON/OFF intermittently
9:51	12	C8	1	HS	Looking
10:17-10:18	13	E10	1	HS	Swimming E, swam to D9
10:20	14	F11	1	HS	Swimming SE
10:48	15	C7	1	HS	Looking
11:09	16	C7	1	CA	Traveling N
11:20					Construction crew on Break, VHOFF
11:35	17	E11	1	HS	Swimming NW
11:40-12:10					MP on break, ELB on watch
13:30					VHOFF, barge moved to onshore timber pile removal.
13:32-13:52					MP to POST 20 min

Date: 11/28/2023

Description: Steel pile removal

Location: Upstream of pier, 1/4th of length from shore Conditions: Sunny, windy. Water chop reduces excellent visibility to good Monitors: Erica Long-Bobian (pier 7, mid), Kayla Walser (pier 1, end)

Today visibility was excellent, with higher than normal winds creating a moderate wind chop that continued until around 2 pm. We were approved to have one monitor stationed at pier 7, and continued to place the second monitor at the end of pier 1. Construction began around 9 am and finished at 4 pm, with no unexpected delays. There was minimal marine traffic in the construction zone, and there was no marine mammal activity observed by either monitor. Steel pile pulling with the vibrohammer occured in 2~4 minute durations throughout the day, as some were corroded and made for longer extraction times.

Time	#	Quad	Number	Species	Behavior/construction activity
8:27					PRE 20 min observation
9:30					Crane barge moved to upriver side of pier
9:52					Vibohammer use ON/OFF intermitently
11:00					Construction break
11:15					Monitor #1 on break (30 min)
11:30					Vibohammer use ON/OFF intermitently
11:45					Monitor #2 on break (30 min)
12:45					Construction pause, appeared to be mechanical
13:30					Construction resumes
14:45					Construction break
15:03					Vibohammer use ON/OFF intermitently
16:00					Construction concludes
12:45					POST 20 min observation

Description: Steel pile removal

Location: Upstream of pier, 1/4th of length from shore, moving towards shore Conditions: Showers throughout the day. Low wind, good visibility Monitors: Erica Long-Bobian (pier 7, mid), Kayla Walser (pier 1, end)

Intermittent rain showers did not heavily affect visibility around the construction site, but did reduce visibility

Time	#	Quad	Number	Species	Behavior/construction activity
7:33					PRE 20 min observation
7:50					Vibro Hammer use ON/OFF intermittently
8:15					Rain stops, improving visibility
9:40					Rain begins, reducing visibility
10:00					Construction paused
11:07					Monitor #2 on break (30 min)
11:49					Monitor #1 on break (30 min)
12:00					ON/OFF intermittently
15:00					Construction break
15:20					Vibro Hammer use ON/OFF intermittently
16:17					POST 20 min observation

Date: 12/11/2023

Description: Steel pile removal Location: Downstream of pier, mid Conditions: Foggy, poor visibility Monitors: Erica Long-Bobian (pier 7, mid), Jonathan Calleja (pier 1, end)

There were multiple construction delays due to mechanical issues with the vibrohammer, ending the day early. The day started with heavy fog and varried visibility between the end of the pier to Mott Island throughout the shift. There was minimal wind, which improved visibility on the surface of the water. One harbor seal was seen swimming between pier 7 and 8, leaving the area shortly after the first sighting. The seal could be described as leisurly milling in the area and looking around.

Time	#	Quad	Number	Species	Behavior/construction activity
7:50					PRE 20 min observation
8:14					Construction approved to begin
8:15					Fog dissapating, visibility increasing
8:42					Mechanical issues with vibrohammer caused a delay, begin intermittent use
9:45					Vibrohammer off, fog returns, visibility 0.5 mi
10:04					Fog decreasing visibility to 0.25 mi
10:06					Vibrohammer work resumes
11:00					Construction break, monitor #1 on break
11:30					Construction resumes, monitor #2 break
11:52	1	В7	1	HS	HS swimming towards shore between pier 7 and 8. Last seen milling at 12:01 and swimming away from shore at end of pier 8
12:31					Fog dissapating, visibility increasing to 0.5 mi
14:10					Construction ends early due to vibrohammer issues.
14:10					POST 20 min observation

Date: 12/14/2023

Description: Steel pile removal Location: Upstream of pier, mid Conditions: Drizzly, 0.5 mi visibility Monitors: Erica Long-Bobian (pier 7, mid), Brad Thiele (pier 1, end)

There was a slight delay this morning due to a gap in the marine mammal monitor schedule, which Brad Thiele came in from Seattle to cover. The construction crew used this delay to cover operating instructions for the new vibratory hammer installed on 12/13/23. The day started with slight rain drizzle that cleared up by late morning. The drizzle impacted visibility minimally. There were no marine mammal sightings, and no other unexpected delays.

Time	#	Quad	Number	Species	Behavior/construction activity
8:20					PRE 20 min observation
8:40					Construction approved to begin
9:06					Intermittent vibro hammer use begins
9:40					Monitor #2 positioned on pier 1
10:30					Drizzle stopped, improving windshield visibility
11:15					Construction break
11:30					Monitor #2 on Break
12:36					Vibro Hammer work resumes
14:30					Construction Break
14:15					Construction resumes
15:56					Construction concludes for the day
15:56-16:20					Monitor #1 to do Post 20 min watch

Date: 12/18/2023

Description: Steel pile removal Location: Upstream of pier, mid Conditions: Drizzly, 1 mi visibility, 10 mph wind Monitors: Erica Long-Bobian (pier 7, mid), Kristine D (pier 1, end)

Wind chop and rain drizzle reduced visibility, clearing up periodically and returning throughout the shift. The barge was absent from the pier at the beginning of the day, and was moved to pier 6. A couple piles were pulled with just a chain and the crane, but the majority were removed with the vibrohammer. There were no marine mammal sightings today and no unexpected delays or events.

Time	#	Quad	Number	Species	Behavior/construction activity
8:13					PRE 20 min observation
8:13					Crew moved the barge from a different pier to the upstream side of the pier, about midway
8:33					Construction approved to begin
8:50					Pulling Pile with crane and chain belt
9:19					Vibro Hammer work begins, intermittent use
9:20					Visibility decreases from good to just OK due to fog, ~0.75 mi
9:24					Drizzle turns into rain
10:34					rain stops, visibility increases to 1.0+ mi
10:50					Construction breaks for lunch, Monitor #1 on break
11:48					Construction Resumes
12:02					Monitor #2 on break
12:56					Rain returns, reducing visibility 0.75 mi
14:35					Rain Stops
15:12					Construction Break
16:12					Construction/Vibrohammer use concludes, Monitor #1 to conduct 20 min post watch

Description: Steel pile removal Location: Upstream of pier, mid Conditions: Excellent 1+ mi visibility, 12 mph wind with 22 mph gusts. White caps Monitors: Erica Long-Bobian (pier 7, mid), Kristine De Wilde (pier 1, end)

Wind chop on the water reduced visibility early in the day, but settled by the evening. There were showers throughout the day with varrying visibility. There were no marine mammal sightings today and no unexpected delays or events.

Time	#	Quad	Number	Species	Behavior/construction activity
7:26					Monitor #1 PRE 20 min observation
7:35					Monitor #2 in position on pier 1
7:46					Construction approved to begin
7:57					Drizzle of rain begins
8:04					Vibro Hammer work begins, intermittent use
8:30					Visibility decreases from good to just OK due to fog, ~0.75 mi
10:55					Construction Break, Monitor #1 on break
11:15					Construction Resumes
11:20					Off and on showers
12:17					Rain has cleared and wind has died down, excellent visibility
14:30					Monitor #2 on break
14:55					Construction Break
15:26					Construction Resumes
16:16					Vibrohammer use concludes for the day
16:17					Monitor #1 PRE 20 min observation

Description: Steel pile removal Location: Upstream of pier, mid Conditions: Poor, fog, low wind, glassy water Monitors: Kristine De Wilde (pier 7, mid), Daniel Whal (pier 1, end)

Lead monitor Erica Long unavailable, Kristine De Wilde to monitor from pier 7. Heavy fog impeded visibility to the point where the construction site was no longer visible and should have stopped until clearing. One harbor seal was seen downstream of pier 7 in the beginning of the day, but no further notes indicate it was seen again. In the future, monitors should reposition their post on the barge if they are unable to see the construction site from pier 7.

Time	#	Quad	Number	Species	Behavior/construction activity
7:30					Monitor #1&2 PRE 20 min observation
7:42	1	B6	1	HS	Looking, swimming between pier 7&8
8:00					Construction approved to begin
8:34					Vibrohammer use begins
8:47					Fog increased, cannot see construction or end of pier
11:54					Fog increased, visibility 100 ft
15:05					Clouds slightly clearing, fog still thick, visibility still poor ~0.1 mi
15:28					Visibility has increased to 0.2 mi, construction site finally clear
16:18					Vibrohammer use concludes, monitor #1 to do post 20 min watch
16:25					Heavy fog, visibility 50-100 ft

Description: Steel pile removal Location: Upstream of pier, 1/3 length proximal to shore Conditions: Poor, heavy fog, low wind, glassy water Monitors: Erica Long-Bobian (pier 7, mid & Barge wheelhouse), Daniel Whal (pier 1, end)

Heavy fog reduced visibility significantly throughout the shift. To gain better visibility, the pier 7 monitor was moved to the top of the wheelhouse on the construction barge for the remainder of the work. There were no marine mammal sightings, and no other unexpected delays.

Time	#	Quad	Number	Species	Behavior/construction activity
7:47					Monitor #1&2 PRE 20 min observation
8:07					Fog increasing, visibility decreases to 0.25 mi
8:10					Vibrohammer use intermittently
8:20					Visibility decreases to 0.15 mi
8:26					Monitor #1 moved from mid pier closer to shore for better visibility of construction barge
8:32					Visibility decreases to 0.1 mi, monitor \$1 moved from pier 7 to the wheelhouse on the construction barge tug
9:24					Visibility increases to 0.13 mi
10:22					Visibiliity decreases to 0.05 mi
10:50					Construction break
11:13					Construction resumes
11:17					Visibility increases to 0.25 mi
12:02					Visibility decreases to 0.05 mi
12:50					Monitor #2 on break
13:25					Visibility increases to 0.1 mi
14:04					Visibility decreases to 0.05 mi
14:20					Construction break
14:30					Barge moves closer to shore, about 1/4 length of pier
14:47					Visibility increases to 0.2 mi
15:03					Construction resumes
15:40					Vibrohammer use concludes for the day. Monitor # 1 ferried on shore to conduct post 20 min watch

Description: Steel pile removal Location: Upstream of pier, 1/3 length proximal to shore Conditions: Fair visibility, light rain, 13mph wind with up to 25 mph gusts, chop over water Monitors: Kristine De Wilde (pier 7, mid), Kayla Walser (pier 1, end)

The day began with light rain and low wind, with increasing wind chop over the water as the day progressed. A dredge barge and accompioning debris barge were positioned at the downstream end of the pier to begin dredging the planned construction site. There were no marine mammals observed and no unexpected delays.

Time	#	Quad	Number	Species	Behavior/construction activity
7:48					Monitor #1&2 PRE 20 min observation
8:08					Cleared for vibrohammer use
8:18					Vibrohammer use intermittently
9:23					Wind picks up, wind chop on water
10:08					Monitor #2 10 min break
11:12					Construction break, Monitor #1 on break
12:50					Monitor #2 15 min break
13:13					Wind calming, clouds and visibility increasing
14:03					Construction break
15:07					New dredge barge brought to construction area
15:15					Dredge barge moved to end of pier, downriver
15:24					Repositioning of vibrohammer barge closer to shore
16:09					3rd barge positioned downriver of barge at the end of the pier
16:20					Vibrohmmer use concludes for the day, monitor #1&2 to do post 20 min watch

Description: Steel pile removal, dredge of construction zone Location: Upstream of pier, close to shore Conditions: Excellent visibility, light rain, Wind chop over the water, some wake from the wind Monitors: Erica Long-Bobian, (pier 7, close to shore), Daniel Whal (pier 1, end)

Wind picked up throughout the day, creating wakes over the water. Showers intermittent throughout the day, did not affect visibility. Dredging occur simultaneously with vibrohammer use further down the pier. There were no marine mammal sightings and no unexpected delays. There are only a few piles remaining for pulling.

Time	#	Quad	Number	Species	Behavior/construction activity
7:43					Monitor #2 in position, begin 20 min pre watch
7:48					Monitor #1 in position
8:04					Vibrohammer work begins, dredging simultaneously mid pier
8:06					Light rain begins, visibility not affected
8:30					Rain stops
10:53					Monitor #1 on break
11:30					Construction break
12:06					Construction resumes
12:27					Monitor #2 on break
13:49					Light rain begins, visibility not affected
15:33					Rain stops
16:11					Vibrohammer use concludes for the day, dredging also finished for the day
4:13					Monitor #1&2 to do 20 min post watch

Description: Steel pile installation with vibratory hammer, sand dredge simultaneously Location: Shoreline Conditions: Showers, visibility is fair, to Mott Island 0.5 mi Monitors: Erica Long-Bobian, (end of pier 7), Kelsey Nelson (wheelhouse of tug barge)

Construction today focused on setting up template for vibratory pile installation near shore. There was no use of the impact hammer, and there were no marine mammal sightings. Visibility slightly improved throughout the day, with fog sitting along the river but keeping away from the inlet.

					Take (Y/N)	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
7:45						Monitor #1 on pier 7, begin 30 min pre-monitor
9:36						Vibro hammer work start, intermittent
10:30						Monitor # 2 on break
11:00						Construction break, Monitor #1 on break
12:01						Rain stops, visibility improves
12:06						Construction resumes, vibro hammer work intermittent
15:30						Monitor #1 relocated closer to shore for better construction activity visibility
16:50						Done with Construction, monitor 1&2 to do post 30 minute watch

Harbor Seals

Level A: 0/29 Level B: 0/83

California Sea Lions

Level A: 0/4 Level B: 0/157

Description: Steel pile installation with vibratory hammer, sand dredge simultaneously Location: Shoreline Conditions: Excellent/good visibility but wind gusts up to 32 mph Monitors: Erica Long-Bobian, (end of pier 7), Kelsey Nelson (wheelhouse of tug barge)

After a few days of monitoring break, we returned for the vibratory installation of steel pile proximal to the shore. The day started with excellent visibility across the river, but hailstorms and wind marred the conditions throughout the day. Most of the day was moving the steel pile with the crane with a few periods of vibro hammer use. There were no marine mammal sightings and no unexpected delays.

					Take	
Time	Sighting #	Quad	Number	Species	(Y/N) (A/B)#	Behavior/construction activity
9:35						Monitor #1 pier 7 begin pre watch
9:45						Barge moving from onshore position to 50 ft offshore, setting up vibratory hammer
9:58						Rain starts, wind picks up
10:12						Rain stops
10:15						Vibro hammer work commences, intermittent
10:42						Hail begins, heavy wind over water picks up
10:52						Wind and hail stops
10:59						Construction break
11:21						Rain begins
11:30						Construction resumes, crane used to move pile
12:50						Rain stops, but heavy wind increases
13:59						Hailing again, visibility decreases
14:25						Rain starts again
14:34						Vibro hammer work intermittent
15:40						Barge relocating to locate underwater pile
15:57						Vibro hammer used to extract pile
16:06						Done with vibro hammer, begin 30 min post-watch

Harbor Seals

Level A: 0/29

Level B: 0/83

California Sea Lions Level A: 0/4

Level B: 0/157

Description: Steel pile installation with vibratory hammer Location: Shoreline Conditions: Fair, showers and hail, 16 mph wind up to 32 mph gusts Monitors: Erica Long-Bobian, (end of pier 7), Kelsey Nelson (wheelhouse of tug barge)

Installation of steel pile began today onshore and monitoring began after initial setup. Heavy wind throughout the day made for choppy waters, and occasional hail also decreased visibility to Mott Island (a little over half a mile). Monitor #2 was positioned in the wheelhouse on the tug to get a better visual of the immediate harassment and exclusion zone. One California sea lion was spotted in the harassment zone outside of vibratory work period, and there were no other unexpected delays.

Time	#	Quad	Number	Species	Behavior/construction activity
9:34					Monitor #1 in position, start 20 min pre-watch
9:40					Monitor #2 in position on barge
9:45					Setup of vibro hammer and steel pile installation
9:58					Wind and rain picks up, decreasing visibility
10:12					Rain stops
10:15					Installation of steel pile with vibro hammer begins, intervals
10:42					Hailing, heavy wind over water
10:52					Hail and wind ceases
10:59					Construction break, vibratory work ends
11:21					Rain begins again
11:30					Construction resumes, use of crane to move piles
12:50					Rain stops, heavy wind continues
1:59					Hailing, visibility decreases
2:01	1	B7	1	CAS	Periscoping, not seen again. Outside of vibratory work period
2:25					Rain starts
2:34					Vibratory work resumes
3:40					Barge moving to locate an underwater pile
3:57					Vibro Hammer used to extract pile
4:06					Vibro Hammer work done for the day, monitor #1&2 to complete 20 min post watch

Description: Steel pile installation with vibratory hammer Location: Shoreline Conditions: Poor, Rain and slight wind, white caps Monitors: Erica Long-Bobian, (end of pier 7), Kelsey Nelson (wheelhouse of tug barge)

Monitoring began around 8 am, with installation of the steel pile starting in the late morning around 9:30. The impact hammer was not used today; only the vibrohammer was used for pile installation for this period. Around 2:30 the vibrohammer broke down but it is said to be an easy repair and they can pick back up tomorrow morning. Rain continued throughout the day and there were no marine mammal sightings

Time	#	Quad	Number	Species	Behavior/construction activity
7:57					Monitor #1 in position, start 30 min pre-watch
8:30					Barge moving from onshore position to a slight offshore position
9:35					Setup of vibro hammer and steel pile installation
9:39					Begin vibrohammer use
11:04					Monitor #1 on break
11:28					Construction break
11:43					Monitor #2 on break
11:56					Construction begins again
2:20					Vibrohammer having mechanical issues with the clamp, finished for the day
2:28					Monitor #1&2 to do 30 min post watch

Description: Steel pile installation with vibratory hammer Location: Shoreline Conditions: Rain, strong wind creating wakes Monitors: Erica Long-Bobian, (end of pier 7), Kelsey Nelson (wheelhouse of tug barge)

Conditions were poor this morning with rain and strong winds impacting visibility. The clamp on the vibrohammer broke the previous day and we needed to wait for repairs to start the morning work. The morning started with a short period of pile installation with the vibrohammer, then finished the work with the impact hammer. It was a short shift and construction concluded by noon. There were no marine mammal sightings.

Time	#	Quad	Number	Species	Behavior/construction activity
9:30					Monitor #2 at wheelhouse, start 30 min Pre Scan
9:34					Monitor #1 in position at the end of pier 7
10:00					Cleared for vibrohammer use
10:43					Construction break
11:11					Setting up impact hammer
11:39-11:41					Impact hammer on
12:08-12:16					Impact hammer on
12:27					Impact hammer put away, construction concludes for the day
12:30					Monitor #1 to do Post 30 min scan

Description: Steel pile installation with vibratory hammer Location: Shoreline Conditions: Fair, visibility 0.5+ mi, rainy but calm waters

Monitors: Erica Long-Bobian, (end of pier 7), Kayla Walser (wheelhouse of tug barge)

Today there was an improvement in visibility, despite the rain. Calm water made surface visibility great. There was no use of the impact hammer, as today was focused on placing pile to drive for tomorrow. There were no unexpected delays and no marine mammal sightings.

Time	#	Quad	Number	Species	Behavior/construction activity
8:10					Monitor 1&2 in position, start 30 min pre scan
8:38					Setting up vibro hammer
9:11-10:08					Intermittent vibro hammer use to install pile
10:08					Use of crane to move pile
10:11					Rain stops
10:42					Intermittent vibro hammer use to install pile
10:59					Construction break
11:02					Monitor #2 on break
11:34					Intermittent vibro hammer use to install pile
14:31					Monitor #1 on break
16:04					Done with construction, monitor #1 to do post 30 min scan
Description: Steel pile installation with impact hammer

Location: 75 ft offshore, 4th bent

Conditions: Good, overcast, visibility 0.5+ mi

Monitors: Erica Long-Bobian (tug wheelhouse), Kelsey Nelson (end of pier 7)

Conditions were excellent with 1.0+ mi visibility and calm water on the surface. Today I learned that each row/group of pile is called a "bent" and are 25 feet apart, and the construction crew was using the impact hammer to install bent #3 and #4 (there is no #1). They were able to finish the installation by noon. Today there were multiple sightings of harbor seals, seen in both the level A exclusion zone and level B harassment zone. Overall there was one take for a harbor seal in the level A exclusion zone, five takes for harbor seals in the level B harassment zone, and one take for a california sealion in the level B harassment zone. There were no shutdowns or delays due to sightings.

					Take	
Time	Sighting #	Quad	Number	Species	(Y/N) (A/B)#	Behavior/construction activity
7:54						Monitor #2 in position, begin 30 min pre scan
8:30						Approved for impact hammer use
8:46						Light rain begins
8:49-8:53						Impact hammer on
9:10-9:14						Impact hammer on
9:25-9:30						Impact hammer on
9:50						Barge moved from N side of construction zone to E side
10:08-10:12						Impact hammer on
10:25-10:32						Impact hammer on
10:29	1	D6, E8	1	HS	Y, A, 1	Looking around, swimming north of pier 7. Seen swimming again through D5 at 10:35, again seen in D7 at 11:20, and last seen swimming in D6. Impact hammer was in use when first sighted and individual continued swimming in the area north of the piers
10:41	2	E3	1	HS	Y, B, 1	Second HS confirmed, different from sighting 1, seen milling. Impact hammer was not on
10:44	3	E3	2	HS	Y, B, 1	Second HS confirmed in E3, seen swimming together. Assuming not the same HS from D6.
10:47	4	E3	5	НS	Y, B, 3	Five individuals seen swimming together in E3, assuming two are from sightings 2 & 3.
11:30-11:37						Impact hammer on
11:35	5	F2	1	CASL	Y, B, 1	Chuffing, looking around. Impact hammer was on
11:43						Putting impact hammer away, construction concludes for the day
11:46						Monitors starting 30 min post scan

Takes

Harbor Seals

Level A: 1/29 Level B: 5/83

California Sealions

Level A: 0/4

Description: Steel pile installation with impact hammer Location: 100 ft offshore Conditions: Good, overcast, visibility 0.5+ mi Monitors: Erica Long-Bobian (tug wheelhouse), Kelsey Nelson (end of pier 7)

Conditions were excellent today with good visibility over the water, 1.0+ mi. The day began with rehammering steel pile that was worked on last week on the 4th bent, but was cut short by a power supply issue when switching to the vibro hammer. A mechanic was unable to service it until later in the afternoon, calling it a day for the crew. There were no marine mammal sightings.

					Take (Y/N)	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
7:46						Monitor #2 in position, begin 30 min pre scan
7:57						Barge moving, positioned 100 ft offshore, in front of work zone
8:14						Monitor #1 brought into wheelhouse
8:45						Impact hammer soft start
8:46-8:48						Impact hammer on
8:56						Impact hammer on briefly
9:07-9:08						Impact hammer on
9:18						Barge moving, positioned upstream of work zone
9:43						Impact hammer on briefly
9:52-9:53						Impact hammer on
9:57-10:00						Impact hammer on
10:52						Switched to vibro hammer, power supply issue preventing work
11:00						Construction break/troubleshooting
12:29						Construction done for the day, considering past 30 min with no work the post 30 min scan for MM

Total Takes for season

Harbor Seals

Level A: 1/29

Level B: 5/83

California Sea Lions

Level A: 0/4 Level B: 1/157

Description: Steel pile installation with Vibro hammer Location: 100 ft offshore Conditions: Good, overcast, visibility 1.0+ mi Monitors: Erica Long-Bobian (tug wheelhouse), Kelsey Nelson (end of pier 7)

Today visibility was fair, with flat waters and visibility past Mott Island. The vibro hammer was used to place three more steel pile to start the 5th bent, and the work for the day was completed. The construction barge moved out of they way so that the barge dumping sand could fill the construction zone to raise the mudline. There were no marine mammal sightings today and no unexpected delays.

					Take	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
7:32						Monitor #2 in position, begin 30 min pre scan
8:13						Monitor #1 brought into wheelhouse
8:44						Rain starts
9:18						Vibro hammer work starts
10:50						Moving barge from upstream to pier to downstream side
11:00						Construction break/troubleshooting
11:31						Begin vibrohammer work
13:22						Moving barge out of way for sand dumping
13:28						Start 30 minute post scan

Total Takes for season Harbor Seals Level A: 1/29

Level B: 5/83

California Sea Lions

Level A: 0/4 Level B: 1/157

Description: Steel pile installation with Vibro hammer and impact hammer Location: 125 ft offshore Conditions: Fair, overcast, visibility 1.0+ mi Monitors: Erica Long-Bobian (end of pier 7), Kelsey Nelson (wheelhouse)

Light rain persisted through the day, creating less than ideal conditions for visibility. After moving the barge to the construction zone, the 5th bent was installed with the vibro hammer and the three piles were impacted. There were no unexpected delays and no marine mammal sightings.

					Take (Y/N)	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
7:50						Moving barge, 125 ft offshore, in front of the construction zone
8:03						Monitor #1 start 30 min PRE scan
8:44						Begin construction work with vibrohammer
10:06						Moving barge downriver >25 ft
10:59						Setting up vibrohammer, intermittent use
11:23						Setting up impact hammer
11:36-11:40						Impact hammer on
12:15-12:16						Impact hammer on
12:32-12:39						Impact hammer on
1:09						Construction Break
1:33						Switching to vibrohammer, set up
2:06						Intermittent vibrohammer use
3:28						Construction done for the day, monitor #1 to do post 30 min scan

Total Takes for season

Harbor Seals Level A: 1/29 Level B: 5/83 California Sea Lions Level A: 0/4

Level B: 1/157

Description: Steel pile installation with Vibro hammer and impact hammer Location: 125 ft offshore Conditions: Fair, Rain, visibility 0.75 mi Monitors: Erica Long-Bobian (end of pier 5), Kelsey Nelson (wheelhouse)

There is no longer vehicle access to pier 7 due to structural concerns and the offsite monitor will now observe from the end of pier 5, the upstream neighboring pier to the work zone. A california sea lion was spotted during the pre-work scan hanging around the work zone, delaying the start time to 9 am, after it had not been seen again for half an hour. On the last summary I had incorrectly noted that the 5th bent was completed on 2/5/24 and it should be the 6th bent that was completed. Today the 7th bent was completed and they set the template back up and vibrated in new pile for the 8th bent and is expected to be impacted tomorrow. The weather improved midday and there were no other marine mammal sightings for the remainder of the day.

					Take	
Time	Sighting #	Quad	Number	Species	(T/N) (A/B)#	Behavior/construction activity
8:06						Monitor #2 in wheelhouse, starting 30 min pre- scan
8:15						Monitor #1 relocating to the end of pier 5
8:19	1	C8-A8	1	CASL	N	Saw a brief glimpse of a back going underwater, seen again in front of pier 6 at 8:23, then last seen a few times 100 yds upstream of the work barge at 8:32. Outside of work period
8:35						Rain stops
9:02						Cleared to start using the vibro hammer, intermittent use begins
10:41						Construction break
11:05						Impact hammer setting up
11:17						Soft start
11:19-11:28						Impact hammer on
11:30						Excellent visibility, calm water and sunny
11:36-11:42						Impact hammer on
11:58-12:02						Impact hammer on
12:15						Finished with 7th bent, switching to vibro hammer
12:48-13:13						Vibro hammer on
14:38						Vibro hammer intermittent use, setting up template
15:25						Vibro hammer on, 8th bent set
15:45						Construction work completed for the day
15:46						Monitor 1&2 to complete 30 min post scan
						Total Takes for season

Harbor Seals

Level A: 1/29 Level B: 5/83

California Sea Lions

Level A: 0/4 Level B: 1/157

Description: Steel pile installation with Vibro hammer and impact hammer Location: 150 ft offshore Conditions: Bad, Heavy fog. Visibility 300 ft Monitors: Erica Long-Bobian (end of pier 5), Kelsey Nelson (wheelhouse)

Heavy fog blanketed the area until late afternoon, with neighboring piers barely visible. The fog however made figures very dark on the reflection of the water, improving surface visibility. Fog was not heavy enough to obscure the shutdown zone, so there was no delay due to the fog. The 8th bent was prepped yesterday and impact driving started after the 30 min pre-scan. A california sea lion was spotted between pier 5 and 4, then spent the next half hour moving between piers 7 and 5 while the vibro hammer was on. At one point the sea lion was within 200 ft of the construction zone. Our IHA outlines that we have takes authorized for vibratory pile removal and pile drive installation, but does not designate takes for vibratory pile installation. Because of this uncertainty, vibro hammer use was paused until the sea lion was seen leaving the immediate area, which was very shortly after. There was another sea lion sighting at the end of the same pier later in the day, but we cannot assume it is the same individual. Template was reset for the next bent and steel pile was vibrated in before the end of the day.

					Take	
Time	Sighting #	Quad	Number	Species	(Y/N) (A/B)#	Behavior/construction activity
7:48						Monitor #2 start 30 min pre scan
8:02						Monitor #1 on pier 5
8:05						Visibility has significantly decreased from 0.75 mi+ to 300 ft within a matter of minutes due to heavy fog movement. Shut down zone visibile from wheelhouse
8:45-8:50						Impact hammer on
8:54-56						Impact hammer on
9:01-9:15						Impact hammer on
9:28-38						Impact hammer on
10:10-10:40						Construction Break
10:40						Setting up vibro hammer
10:45						Neighboring piers barely visibile
10:58-11:27	1	B7/B8/B9	1	CASL	undefined	Seen swimming N, right of pier 5. 11:11 seen swimming between pier 6/5. 11:14 Vibro hammer work starts. 11:15 Seen swimming left of the pier, then back to the other side of pier 5. 11:20 Seen swimming towards pier 7. 11:24 200 ft from barge, monitor #2 asks that vibro work pauses while individual passes. 11:25 seen swimming between 5/6 about 600 ft offshore. 11:27 seen heading towards pier 4, leaving visibile area.
11:14						Vibro hammer intermittent use, setting up template
11:39						Visibility increasing, Mott island visible and sun coming out
11:40						Putting vibro hammer down
11:47	2	C8	1	CASL	Undefined	Looking around at the end of pier 6
11:58						Vibro hammer use intermittent
14:34						Vibro hammer being put away
14:59						Construction work done for the day
15:00						Start 30 min post scan

2/7/2024

Harbor Seals

Description: Steel pile installation with Vibro hammer and impact hammer Location: 200 ft offshore Conditions: Fair, sprinkling/overcast, calm waters Monitors: Erica Long-Bobian (end of pier 5), Kelsey Nelson (wheelhouse)

Today the 10th bent was completed and template was set for tomorrow. Conditions were much better than yesterday

Time	Sighting #	Quad	Number	Species	(Y/N)	Behavior/construction activity
8:31						pre scan
8:33						Monitor #1 on pier 5
9:47						Vibro hammer use intermittent
10:39						Light rain stops
10:50						Putting vibro hammer down
11:00						Construction break
11:43						Setting up impact hammer
11:58						Soft start strike
12:00-12:02						Impact hammer on
12:21-12:30						Impact hammer on
12:37-12:54						Impact hammer on
13:09-13:15						Impact hammer on
13:17						Putting impact hammer away, bent 10 complete
13:30						Setting up template for bent 11
14:07						Vibrohammer use intermittent, pile install
14:58						watch

Description: Steel pile installation with Vibro hammer and impact hammer Location: 200 ft offshore Conditions: Fair, light rain, fog on river, 1.0 mi visibility Monitors: Erica Long-Bobian (Wheelhouse), Kelsey Nelson (pier 5, end)

The day started with OK visibility, with minimal impact from the light rain. The crew completed the installation of bent #11 before the stern spud line broke. They were able to fix it and return to bent #9, which needed more work. There were no marine mammal sightings today.

					Take (Y/N)	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
8:02						Monitor #1 in position, start 30 min pre scan
8:03						Monitor #2 in wheelhouse
8:38						Vibro hammer work begins, intermittent
9:14						Switching to impact hammer
9:36						Soft start strike
9:55-10:01						Impact hammer on
10:05-10:13						Impact hammer on
10:22						Switching to vibro hammer, intermittent use
10:51						Putting vibro hammer away, break
11:22						Setting up impact hammer
11:34-11:36						Impact hammer on
12:03-12:16						Impact hammer on
12:21-12:30						Impact hammer on
12:35-12:42						Impact hammer on
12:50-12:56						Impact hammer on
13:04						Putting impact hammer down, completed bent 11
13:12						Stern spud line breaks, crew working to fix
14:12						Barge moving to upstream side to work on bent 9
14:43						Vibro hammer intermittent use
15:06						Construction break
15:23						Vibro hammer use intermittent
15:48						Setting up impact hammer
16:00-16:10						Impact hammer on
16:16						Construction completed for the day, begin 30 min post scan

Harbor Seals

Level A: 1/29 Level B: 5/83 California Sea Lions Level A: 0/4 Level B: 1/157

Description: Steel pile installation with Vibro hammer and impact hammer Location: 175 ft offshore Conditions: Fair, sprinkling/overcast, calm waters Monitors: Erica Long-Bobian (Wheelhouse), Kelsey Nelson (pier 5, end)

Today's work was focused on completing installations on bent #9. Before they could start, the bow spud line broke and they needed to fix it before resuming. The same spud line broke again later in the day, creating another delay. Pile driving was eventually completed on bent 9, and there were no marine mammal sightings.

					Take (Y/N)	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
8:04						Monitor #2 to start 30 min pre scan
8:24						Spud line broke while moving barge in to position, creating delay for monitor #1 to the tug
8:43						Moving barge from upstream of site to downstream side, facing bent 9. About 175 feet offshore from the midline
9:43						Setting up vibro hammer, intermittent use on bent 9
10:03						Setting up impact hammer
10:19						Soft start strike
10:21-10:22						Impact hammer on
10:23-10:31						Impact hammer on
11:01-11:15						Impact hammer on
11:30						Construction break
12:00						Setting up impact hammer
12:02						Rain begins, does not impact visibility
12:13-12:22						Impact hammer on
12:33-12:37						Impact hammer on
12:49						Bow spud line breaks again when attempting to move the barge, crew is fixing it
14:05						Moving barge to upstream side to impact the other side of bent 9
14:32						Setting up impact hammer
15:08-15:13						Impact hammer on
15:19						Impact hammer switches to bent 10
15:31-15:48						Impact hammer on
15:56						Construction done for the day, start 30 min post scan

Harbor Seals

Level A: 1/29

Level B: 5/83

California Sea Lions

Level A: 0/4

Level B: 1/157

Description: install of two 18 in pile, short day Location: bent 4, upstream Conditions: okay, heavy fog 0.25 mi visibility, calm water Monitors: Kelsey Nelson (Wheelhouse), Erica Long-Bobian (pier 5, end)

Today was a short day as there was only two 18 in pile to hammer down that were already set in place. More pile needed to be placed on the barge so the hammer work was done before noon. The fog lifted slightly but stuck around most of the shift. There were no marine mammal sightings and no unexpected delays.

					Take (Y/N)	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
8:02						Monitor #1&2 to start 30 min pre scan
9:40						fog clearing
9:42						soft start strike, followed by a few strikes, brief
10:34						finished with first pile, moved to downstream side to work on second
10:45-10:49						impact hammer on
10:55						putting hammer down
11:05						hammer use done for the day, will move more pile to barge. start 30 minute post scan

Harbor Seals

Level A: 1/29

Level B: 5/83

California Sea Lions

Level A: 0/4

Level B: 1/157

Description: installing steel pile w/vibro hammer and impact hammer Location: upstream of bents 12-14, 250 ft offshore Conditions: Excellent visibility 1.0+ mi, overcast/sunny, calm water Monitors: Erica Long-Bobian (Wheelhouse), Kelsey Nelson (pier 5, end)

Today template was set up along the upstream side of bents 12-14. The crew completed vibrating and impacting the three pile and then moved the barge to prep for tomorrow's work. Visibility was excellent and there were no unexpected delays. At the end of the 30 minute scan a single california sea lion was spotted swimming north, which we can assume was within the area during impact driving and will be considered a level B take.

					Take (Y/N)	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
7:55						Monitor #1 to start 30 min pre scan
8:05						barge moving to upstream side of bent 12-14 location
8:21						moving pile with crane and chains
8:50						setting up vibro hammer
9:12						setting up template piles
9:29						vibro hammer intermittent use
10:18						putting down hammer
10:29						setting up template
11:06						construction break
11:20						construction resumes
11:23						setting piles into template using crane and chains
11:34						setting up vibro hammer
11:42						ingermittent vibro hammer use
12:54						three upstream side piles placed for bents 12-14, vibrate work complete
13:26						picking up impact hammer
13:41						soft strike
13:42-13:45						impact hammer on
13:57-13:58						impact hammer on
14:05-14:17						impact hammer on
14:41						construction break
15:03						picking up impact hammer again
15:16-15:18						impact hammer on
15:36-15:38						impact hammer on
15:50						Construction done for the day, begin 30 min post scan
16:19	1	C8	1	CASL	Ү, В	Sighted at the end of the scan, traveling N

Harbor Seals

Level A: 1/29 Level B: 5/83 California Sea Lions

Level A: 0/4

2/15/2024

Level B: 2/157

Description: Resetting template pile with vibro hammer Location: upstream of bent 14 Conditions: OK, 20 mph winds with gusts up to 37 mph, white caps. Overcast Monitors: Erica Long-Bobian (Wheelhouse), Kelsey Nelson (pier 5, end)

The plan for the day was resetting template pile for the next row of pile installation. The heavy wind created unfavorable monitoring conditions in the wheelhouse due to constant rocking, and monitor #1 relocated to the shoreline on the downstream side of the work zone. By the end of the day it was discovered that the 11th bent may be off by about 1 ft and there was an attempt to remove the set pile, but there will need to be a correction. There were no marine mammal sightings today.

					Take	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
7:55						Monitor #1 to start 30 min pre scan
8:41						Vibro hammer set up
9:35						Template pile being moved from 11th bent, 25 ft forward
10:27						Vibro hammer set down
11:23						Construction break
12:00						Moving barge, upstream of 9th bent
12:18						intermittent vibro hammer use, removing template pile and moving forward to 12th bent location
13:25						Monitor #1 relocating from wheelhouse to onshore, motion sick from wakes
14:54						Prepping vibro hammer to install template pile
15:10						Vibro hammer use intermittent
15:28						Done with vibro hammer for the day
15:30						Begin 30 min post watch

Harbor Seals

Level A: 1/29

Level B: 5/83

California Sea Lions

Level A: 0/4

Level B: 2/157

Description: Resetting template pile with vibro hammer Location: upstream of bents 9-11 Conditions: Good, visibility 1.0+ mi, white caps, overcast Monitors: Kelsey Nelson (Wheelhouse), Erica Long-Bobian (pier 5, end)

Today the construction crew installed 18 in pile near bent 11 and set up template pile using both the vibro hammer and

Time	Sighting #	Quad	Number	Species	(Y/N)	Behavior/construction activity
9:03						Start 30 min pre scan
9:49						side of 10
10:11						Vibro hammer on intermittent
11:25						Construction break
11:56						Monitor #1 on break
12:00						Construction resumes
12:26						in steel pile
14:01						Setting down hammer
14:11						Setting up impact hammer
14:39						soft strike
14:45						Impact hammer on briefly
14:47-14:50						Impact hammer on
15:02-15:06						Impact hammer on
15:15-15:18						Impact hammer on
15:23						Laying hammer down
15:31						Construction break
14:04						completed 30 minutes of post watch

Description: Resetting template pile with vibro hammer Location: upstream of bents 9-11 Conditions: Good, visibility 1.0+ mi, moderate wind, overcast Monitors: Kelsey Nelson (Wheelhouse), Erica Long-Bobian (pier 5, end)

The day started with a sea lion sighting during the pre-scan period so construction did not begin until the sea lion had

Time	Sighting #	Quad	Number	Species	(Y/N)	Behavior/construction activity
7:39						Start 30 min pre scan
7:42	1	A2	1	CASL	N	Seen swimming W, during pre-scan period
8:12						Cleared for construction work
8:22						Setting up impact hammer
8:32-8:35						Impact hammer on
8:40						Rain starts
8:44-8:48						Impact hammer on
8:54						Impact hammer on briefly
9:04-9:07						Impact hammer on
9:26						Moving barge to shore
9:32						Loading pile onto barge
9:36	2	A8	2	CASL	Υ, Β	pier 5, swimming W. Not currently using hammer
10:14						Moving barge back to work zone
11:45						Vibro hammer use intermittent
12:01						Setting for template between bents 9 & 10
12:41						Setting up vibro hammer
12:45						Vibro hammer use intermittent
12:59						Putting down hammer
13:24						Vibro hammer use intermittent
14:36						Impact hammer setting up
14:44						Soft strike start
14:46-49						Impact hammer on
15:01-15:05						Impact hammer on
15:15-15:18						Impact hammer on
15:25						construction, begin 30 min post watch

Description: Resetting template pile with vibro hammer and impact hammer Location: upstream of bents 9-11 Conditions: Raining/ sprinkling throughout day, flat water and good visibility distance Monitors: Kelsey Nelson (Wheelhouse), Erica Long-Bobian (pier 5, end)

Rain and fog came and went, varying visibility distance throughout the day. Construction included setting pin pile

Time	Sighting #	Quad	Number	Species	(Y/N)	Behavior/construction activity
7:40						Start 30 min pre scan
8:10						Cleared for construction work
8:15-8:18						Impact hammer on
8:28-8:30						Impact hammer on
8:39						Impact hammer on briefly
8:55						Vibro hammer setting up
9:01						Vibro hammer on intermittent
9:58						Vibrated and pulled pile between bents 9/8
10:12						Vibro hammer put down, rain starts
10:20						Visibility distance decreases due to fog, ~0.5+ m
10:53						rain stops, fog clears
11:41						Vibro hammer use intermittent
12:53						Construction break
13:32						Vibro hammer use intermittent
13:40						Rain starts again, fog decreasing visibility
14:36						rain stops and visibility increases
14:37						construction break
14:55						Impact hammer set up
15:16-15:17						Impact hammer on
15:27-15:28						Impact hammer on
15:32						Impact hammer put down
15:48						minute post scan following last impact activity

Description: Putting in pin piles between bents, use of vibro hammer and impact hammer Location: upstream of bents 9-11 Conditions: Excellent, sunny, great visibility distance Monitors: Kelsey Nelson (Wheelhouse), Erica Long-Bobian (pier 5, end)

Visibility was excellent throughout the day with sunny skies and low wind. The majority of construction work was

Time	Sighting #	Quad	Number	Species	(Y/N)	Behavior/construction activity
7:45						Start 30 min pre scan
9:51-9:53						Impact hammer on
10:04						Impact hammer on
10:29						of 8-10
10:42						Impact hammer on
10:50						impact hammer on
10:53-10:55						impact hammer on
11:03						Construction break
11:46-11:48						Impact hammer on
11:55-11:57						Impact hammer on
12:03-12:04						Impact hammer on
12:24						Intermittent vibro use, removal of template
13:19						Putting vibro hammer down
13:57						moving pile with crane and chain
14:10						vibro hammer use intermittent
15:03						scan

Description: Installing steel pile with vibro hammer and impact hammer Location: Downstream of bents 8-10

Conditions: Excellent in the morning, poor in the afternoon. Overcast with little wind, moving to hailstorms throughout the day Monitors: Erica Long-Bobian (Tug Wheelhouse), Kelsey Nelson (pier 5)

Visibility started great with distance visibility all the way to Washington with flat water, then transitioned to hail storms off and on throughout the shift. Construction consisted of installing pile into bents 8-10, first with the vibro hammer and followed by the impact hammer. The bursts of hail storms were sudden but did not seem to impact work. There were no marine mammal sightings today.

					Take	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
8:03						Start 30 min pre-scan
8:21						Sudden hail storm, decreases visibility
8:33						Cleared to use hammer
9:29						Placing pile in template near bents 8/9/10
9:44						Vibro hammer use intermittent
10:32						Construction break
11:03						Setting up impact hammer
11:10						Rain Starts
11:16						Soft Strike
11:19-11:24						Impact hammer on
11:38-11:41						Impact hammer on
11:53						Rain starts, brief
12:03-12:04						Impact hammer on
12:27						Intermittent vibro hammer use
13:04						Moving template to barge
13:27						Impact hammer on
13:28						Brief hail storm, decreases visibility
13:29-13:37						Impact hammer on
13:34-13:45						Impact hammer on
13:53-13:55						Impact hammer on
14:00						Construction done for the day, 30 minute post scan

Harbor Seals

Level A: 1/29 Level B: 5/83 California Sea Lions

Level A: 0/4

Level B: 4/157 Level B Sightings during vibro install: 2

Description: Installing steel pile with vibro hammer

Location: Downstream of bents 8-10

Conditions: Poor, Good visibility distance 0.75 mi+ to fog, rain with high gusts of wind, choppy water Monitors: Kelsey Nelson (Tug Wheelhouse), Mary Powers (pier 5)

Today visibility was poor due to heavy wind and rain, creating choppy waters and slight fog. Construction work involved moving template pile and installation of steel pile using the vibro hammer. There were no unexpected delays and no marine mammal sightings.

					Take	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
7:58						Start Pre-Scan period
8:28						Cleared for hammer use
9:47						Vibro hammer use intermittent, moving pile
10:41						Construction Break
12:29						Moved barge to end of pilings, facing shore
14:02						Vibro hammer use intermittent
16:19						Moved barge downstream to second bumper pile
16:38						Vibro hammer use intermittent
16:48						Construction done for the day, 30 minute post scan

Harbor Seals

Level A: 1/29 Level B: 5/83 California Sea Lions

Level A: 0/4

Level B: 4/157

Description: Installing steel pile with vibro hammer Location: Downstream of bumper pile Conditions: OK. Overcast with light wind, good visibility distance Monitors: Kelsey Nelson (Tug Wheelhouse), Mary Powers (pier 5)

Conditions were fair with wind increasing into the afternoon. Observer Mary Powers to fill in for ELB on pier 5. Both the impact hammer and the vibro hammer were used to install steel pile, with mechanical issues causing a delay in the afternoon. The spud line also broke, causing delay to fix it. There were no marine mammal sightings.

					Take (Y/N)	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
7:34						Start 30 Min pre-scan
8.04						Cleared for hammer use
8:26-8:43						Impact hammer on
9:01						Vibro hammer use intermittent
10:04-10:19						Impact hammer on
10:46						Moved barge closer to shore, downstream
11:00						Construction break
11:43						Vibro hammer use intermittent
12:27						Moved barge closer to shore again
12:30						Vibro hammer issue, spud line broke as well
15:07						Moved barge upstream, facing shore
15:55-16:14						Impact hammer on
16:16						Construction done, begin 30 min post scan

Harbor Seals

Level A: 1/29 Level B: 5/83 California Sea Lions

Level A: 0/4

Level B: 4/157

Description: Installing steel pile with vibro hammer Location: Downstream of work zone Conditions: OK. Overcast with snow and rain. Calm waters and excellent visibility distance Monitors: Kelsey Nelson (Tug Wheelhouse), Mary Powers (pier 5)

Weather was poor today with rain and snow periodically, impacting visibility. Mary Powers filling in again for ELB on pier

Time	Sighting #	Quad	Number	Species	(Y/N)	Behavior/construction activity
7:32						Start 30 Min pre-scan
8:02						Cleared for hammer use
9:23						Vibro hammer use intermittent
10:30						Construction break
12:04-12:16						Impact hammer on
12:36						pile
12:47						Vibro hammer use intermittent
13:16-13:25						Impact hammer on
13:50						Moved barge to face away from shore
14:07						Vibro hammer use intermittent
15:04						post scan

Description: placing steel float pile with vibro hammer Location: Downstream of bent 13, downstream of bent 9 Conditions: OK. Slight wind, snow, OK visibility distance 0.75 mi Monitors: Erica Long-Bobian (Tug Wheelhouse), Kelsey Nelson (pier 5)

Snowfall varried the visibility throughout the shift, but overall monitoring conditions were good-OK. Vibratory work was

Time	Sighting #	Quad	Number	Species	(Y/N)	Behavior/construction activity
8:03						Start 30 Min pre-scan
8:11-8:21	1	C9	1	CASL	N	Looking around, swimming, chuffing air
8:22-8:43	2	C8	1	CASL	Ν	forth, looks to be feeding
8:57		D10	1	CASL	N	sightings 1&2, seen swimming E
9:14						cutting pier, waiting for surveyor. Setting up
9:15						Wind picking up, creating choppy waters
9:19-10:00	3	D10	2	CASL	Υ, Β	area. Vibratory work removing template pile
9:26						placing template pile
10:16						Rain starting, skies getting very dark
10:19						pile install near bent 13
10:30						Snowing
11:17						Construction break
11:39	4	D10	1	CASL	N	from sighting 3
11:59						in template
12:28						hammer, finished placing 3 float pile
13:05						E, below bent 8. Working on setting up
13:15						Vibro hammer use intermittent
15:29						Construction break
16:05						Vibro hammer use intermittent
16:50						scan

Harbor Seals

Level A: 1/29 Level B: 5/83

California Sea Lions

Level A: 0/4

Level B: 4/157

Level B Sightings during vibro install/removal: 4/139

Description: placing steel float pile with vibro hammer Location: Downstream of bent 13, downstream of bent 9 Conditions: OK. Fog impacting visibility, reduced to 0.75 mi. Calm Waters Monitors: Erica Long-Bobian (Tug Wheelhouse), Mary Powers (pier 5)

Today was a very short shift because only two fender piles were impacted. Two california sea lions were seen feeding in front of pier 5, the same area two sea lions were feeding the previous shift. They were seen shortly after impact driving had finished, so it was two level B takes.

					Take	
Time	Sighting #	Quad	Number	Species	(A/B) #	Behavior/construction activity
8:05						Start 30 Min pre-scan
8:35						Cleared for hammer use
8:43						Soft strike
8:50-54						Impact hammer on
9:12-9:16						Impact hammer on
9:19	1	D10	2	CASL	Y/B	Seen feeding in the area
9:33						Construction done for the day
9:35						Start 30 minute post-scan

Harbor Seals	
Level A: 1/29	
Level B: 5/83	
California Sea Lions	
Level A: 0/4	

Level B: 6/157

Level B Sightings during vibro install/removal: 4/139

Description: placing steel float pile with vibro hammer Location: downstream of bent 6 Conditions: OK. Fog impacting visibility, reduced to 0.75 mi. Calm Waters Monitors: Kelsey Nelson (Tug Wheelhouse), Erica Long-Bobian (pier 5)

Foggy conditions greatly impacted visibility distance down to less than 0.25 mi, but the water was calm. Only two float

Time	Sighting #	Quad	Number	Species	(Y/N)	Behavior/construction activity
8:55						Start 30 Min pre-scan
9:31						Intermittent vibro use
9:47-9:53	1	C7-D10	5	CASL	Y/B	the N and moving SE, spotted numerous times
9:56	2	B8	1	CASL	Y/B	about 100 ft from barge. Hammer was not
10:19						Vibro hammer set down
10:38						Done with construction
10:40						Start 30 minute post-scan

Harbor Seals

Level A: 1/29 Level B: 5/83

California Sea Lions

Level A: 0/4 Level B: 6/157

Level B Sightings during vibro install/removal: 10/139

Description: Impacting and vibrating steel pile Location: downstream of bent 6 Conditions: Rainy, flat water Monitors: Erica Long-Bobian (construction shoreline), Kelsey Nelson (pier 5)

Today conditions were good with off and on showers throughout the shift. Remaining float pile were impacted in place,

Time	Sighting #	Quad	Number	Species	(Y/N)	Behavior/construction activity
7:31						Start 30 Min pre-scan
7:52						near bent 4
8:30						setting up impact hammer
8:38						soft strike
8:42-8:46						Impact hammer on
8:58-9:01						Impact hammer on
9:10-9:11						Impact hammer on
10:30						Construction break
12:07						brief vibro hammer
13:35-13:38						Impact hammer on
14:16						Moving barge
14:26						Construction break
15:20						Construction done for the day

Harbor Seals Level A: 1/29 Level B: 5/83 <u>Califomia Sea Lions</u> Level A: 0/4 Level B: 12/157 Level B Sightings during vibro install/removal: 4/139

Description: Impacting and vibrating steel pile Location: downstream of bent 6 Conditions: OK. Good visibility distance but choppy waters and wind decreasing surface visibility Monitors: Erica Long-Bobian (Tug Wheelhouse), Kelsey Nelson (pier 5)

Today started overcast with rough waters and ended with calm waters and sunny skies. The construction crew were

Time	Sighting #	Quad	Number	Species	(Y/N)	Behavior/construction activity
7:40						Start 30 Min pre-scan
8:10						Cleared for hammer use
8:16-8:20						Impact hammer on
8:53						putting in templates for float pile
10:30						Vibro hammer set down
11:04						construction break
11:30						Moving barge
11:44						Moved barge to upstream side near bent 11
11:57						moving pile with crane
12:07						vibro hammer on intermittent
12:33						switching to impact hammer
12:49						soft strike
12:54-13:02						Impact hammer on
13:08-13:12						Impact hammer on
13:40						bent 7
14:40						Vibro hammer on
15:11						Putting vibro hammer down
15:50						Start 30 minute post-scan

Harbor Seals

Level A: 1/29 Level B: 5/83 <u>California Sea Lions</u> Level A: 0/4 Level B: 12/157

Level B Sightings during vibro install/removal: 4/139

Description: Impacting and vibrating steel pile Location: downstream of bent 6 Conditions: Rainy, flat water Monitors: Erica Long-Bobian (construction shoreline), Kelsey Nelson (pier 5)

Today conditions were good with off and on showers throughout the shift. Remaining float pile were impacted in place,

Time	Sighting #	Quad	Number	Species	(Y/N)	Behavior/construction activity
7:31						Start 30 Min pre-scan
7:52						near bent 4
8:30						setting up impact hammer
8:38						soft strike
8:42-8:46						Impact hammer on
8:58-9:01						Impact hammer on
9:10-9:11						Impact hammer on
10:30						Construction break
12:07						brief vibro hammer
13:35-13:38						Impact hammer on
14:16						Moving barge
14:26						Construction break
15:20						Construction done for the day

Harbor Seals Level A: 1/29 Level B: 5/83 <u>Califomia Sea Lions</u> Level A: 0/4 Level B: 12/157 Level B Sightings during vibro install/removal: 4/139

Description: Pull test for piles Location: downstream of bent 10 Conditions: Flat water, overcast, great visibility Monitors: Erica Long-Bobian (pier 5 mid)

Today was the last day for monitoring, and all that was left to do was to do a pull test and remove template pile. The

Time	Sighting #	Quad	Number	Species	(Y/N)	Behavior/construction activity
7:57						Start 30 Min pre-scan
8:27						Cleared for hammer use
8:40						Pull testing a pile
10:02						Pulling template
10:18						Done with testing and monitoring

Harbor Seals

Level A: 1/29 Level B: 5/83

California Sea Lions

Level A: 0/4

Level B: 12/157

Level B Sightings during vibro install/removal: 4/139

FRC Pile Project

Marine Mammal Monitoring

Description: Steel pile removal with vibro hammer Location of work: Remaining offshore pier section Monitoring sites: Tug wheelhouse on barge, end of pier 5 Monitors: Brad Thiele, Bill McQueen, Keeley Rideout, Jonathan Calleja, Kristine DeWilde, Erica Long-Bobian

Below shows the total monitoring activities and sightings observed between the dates of 5/13/24-5/24/24 as conducted by the monitors

Date	Monitors	Visibility	Time	Quad	Number	Species	(Y/N)	Behavior/construction activity
5/13/24	BT, BM	Excellent	7:35					End of 30 min scan, cleared to start
			12:25					Vibro On, intermittent use
			14:40					Vibro Off
			15:10					Complete 30 min post scan
5/14/24	BT, BM	Excellent	7:25					End of 30 min scan, cleared to start
			7:35					Vibro On, intermittent use
			12:40					Move barge forward
			14:15					Vibro Off
			14:45					Complete 30 min post scan
5/15/24	BM, JC	Excellent	7:20					Begin 30 min scan
			7:30	C8	1	HS	N	Sighting before construction start
			7:56	D7	1	HS	Υ, Β	Same individual
			8:55					HS not seen in 30 min, Vibro On
			13:45					Wind increase over water, visibility decrease
			14:49					Vibro Off, begin 30 min post scan
5/16/24	KR, KD	Excellent	7:50					Begin 30 min pre-scan
			8:15	D9	1	HS	N	Sighting before construction start
			9:45	D9	1	HS	Y. B	area
			10:17	C9	1	HS	,	Same individual
			10:33	C8	1	HS		Same individual
			10:42	C7	1	HS		Same individual, edge of shutdown zone
			11:30	C9	1	HS		Same individual
			11:57	C8	1	HS		Same individual seen moving within zones
			14:44					Vibro Off, begin 30 min post scan
5/17/24	KR FLB	Excellent	7:21					Start 30 min scan
0, 11, 21			7.41	D7	1	HS	N	Sighting before vibro work
			8:04	B7	1	HS	 Ү. В	Start
			8:17				- , _	Vibro On intermittent use
			10:27	D8	1	HS	Y. B	Start after construction lunch break
			10:54	C8	1	HS	N.	l ikelv same individual
			10:59	C9	2	HS	Ү. В	individual
			14.49	00			., 2	Vibro Off begin 30 min post scan
5/20/24	KR BM	Excellent	7:15					Start 30 min scan
	,		8:20	E6	3	HP	Y. B	Last seen at 8:24 in F6, called for shutdown
			8:39	D6	1	CSI	Y.B	
			8:55	D6	1	HS	Y. B	Looking around
			9:30	E4	1	CSL	Y. B	Looking around
			12.47	C7	1	HS	Y.B	
			12:58	D6	1	HS	- , -	Same individual
5/21/24	KR BM	Poor	7:15					Begin 30 min scan
	,		8:37	D10	1	HS	Y. B	Looking
			9:42	C9	1	HS	, _ Ү. В	Cannot assume same individual
			12.48	C8	1	CSL	, <u>–</u> Ү. В	
			13:03	C9	1	CSL	, _	Same individual
			14:47			-		Vibro Off, start 30 min post scan
5/22/24	KR, BT	Excellent	7:12					Start 30 min scan
			7:27	C6	1	CSL	N	Sighting period before construction start
			11:19	D2	1	CSL	Ү, В	Looking

			13:50	C7	1	CSL	Υ, Β	Looking
			14:37	D8	1	CSL		Same individual
			14:59					Vibro Off, start 30 min post scan
5/23/24	BT	Excellent	7:05					Start 30 min scan
			7:35					Vibro On, Intermittent
			10:45					Vibro Off, continuous break
			11:30					Vibro On, Intermittent
			12:02	C8	1	CSL	Υ, Β	Diving
			14:40					Vibro Off, start 30 min post scan
5/24/24	BT, ELB	Excellent	7:12					Start 30 min scan
			8:23					Vibro On, intermittent
			9:32					Vibro Off, begin 30 min post scan

Attachment C: Resumes

BRAD THIELE

PROFESSIONAL EXPERIENCE

Mr. Thiele has over 30 years experience as a biologist and has managed Northwest Environmental Consulting, LLC since 2006. Brad's experience includes wetland assessments, Endangered Species Act compliance, permitting, and NEPA/SEPA.

Mr. Thiele is proficient with local code interpretation and state and federal permitting processes. Permitting expertise includes Section 404 and 401 permits, shoreline permits, HPA, Biological Assessment (BA) preparation, and NPDES. Mr. Thiele has experience completing National Environmental Policy Act/State Environmental Policy Act (NEPA/SEPA) checklists, technical reports, and discipline reports primarily for public works project.

Mr. Thiele is seasoned in conducting wetland determinations, delineations, classifications, and functions and values assessments in freshwater, riparian, and estuarine systems and has completed training for the new Ecology Wetland Rating System for Western Washington. He has developed mitigation plans, restoration monitoring, and conducted site feasibility studies. He has also provided construction management services for habitat mitigation.

EDUCATION

Bachelor of Science, University of Dayton. 1993. Major: Biology, Minor: Environmental Engineering Technology

EMPLOYMENT HISTORY

Northwest Environmental Consulting, LLC	2006 - Present
Seattle, WA	President
Anchor Environmental, LLC	2005 - 2006
Seattle, WA	Planner
Entranco	2001 - 2005
Bellevue, WA	Biologist
Landau Associates, Incorporated	2000 - 2001
Edmonds, WA	Biologist
TAMS Consultants, Incorporated	1994 - 2000
Chicago, IL	Biologist

CERTIFICATIONS/TRAINING

Marbled Murrelet Monitoring Methods, 2011 - 2017 Delineation of Ordinary High Water Mark and Ordinary High Water Line, 2009 Revised Washington State Wetland Rating System in Western, WA, 2005 Identification of Wetland Plants of the Pacific Northwest, 2000 Identification of Grasses, Sedges, and Rushes, 2003 Wetland Identification with an Emphasis on Soils, 1997 Bellevue Critical Areas Training, 2009 Advisor to UW Wetlands Certification Program, 2004-2009 Environmental Overview LAG Manual Chapter 24 Environmental Processes, 2003 Aquatic Invertebrate Ecology, 1998-1999

PERTINENT PROJECT EXPERIENCE

Hood Canal Bridge Replacement; Kitsap County, WA

Mr. Thiele managed and directed a field team responsible for hazing marbled murrelets during construction of the east and west approaches of the Hood Canal Bridge and Port Angeles graving dock. Concerns were that marbled murrelets would be harmed during impact pile driving. The objective of hazing was to harass to prevent harm.

Manette Bridge Reconstruction, Bremerton, WA

Mr. Thiele provided 2 weeks of marbled murrelet monitoring services and marine mammal monitoring services during demolition of bridge abutments at the Manette Bridge in Bremerton.

Pier 57 Seattle Great Wheel, Seattle, WA

Mr. Thiele managed 3 marine mammal monitors during construction of the Seattle Great wheel. Construction monitoring took place during installation of approximately 150 piles that took two months to install in 2012. Maintenance driving was also completed in 2014.

Edgewater Hotel Pile Replacement Project, Seattle, WA

Mr. Thiele managed 8 marine mammal monitors during pile installation to repair failing piles under the edgewater hotel in Seattle. Mr. Thiele was the lead monitor and was indirect contact with the construction manager. Monitoring was required for 2 weeks in 2010 and 1 week in 2012.

SR 20 Spur Friday Harbor and Orcas Ferry Terminals Dolphin Replacement, San Juan County, WA

Mr. Thiele managed a boat and monitor for a 6 week project in the San Juan Islands. Marine Mammals were monitored for take in the disturbance zone. Monitoring included operating a boat on a transect while the marine mammal monitor recorded animals observed. Observations were given to WSDOT employees to report on the amount of "take" that took place during the pile driving and removal activities.

Naval Magazine Indian Island Ammunition Wharf Piling Replacement Project, Jefferson County, WA

Mr. Thiele managed marine mammal monitoring at the Indian Island Naval facility. Pile driving activities took about 4 weeks to complete. A single monitor was required at the site during pile driving installation. A report on obervations was prepared and submitted to the U.S. Navy.

Port Angeles Wave Barrier Replacement. Port Angeles, WA

Mr. Thiele managed a remote monitor at the Port Angeles site during pile installation. The project took two days to complete. The monitor was responsible for recording and reporting ESA listed marine mammals to the construction manager to shut down operations if an ESA listed marine mammal entered the disturbance area. A report on observations was submitted to the U.S. Coast Guard.

Naval Shipyards Bremerton Pier 6 Fender Piling Replacement. Bremerton, WA

NWEC conducted marine mammal and marbled murrelet monitoring for the Pier 6 fender piling replacement periodically over a five month span. Monitoring occurred during removal and replacement of fender pilings. The project will continue in 2016

Marine Mammals were monitored for take for level A and B zones. The monitoring was completed to as part of an Incidental Harassment Authorization (IHA) as permitted from National Marine Fisheries (NMFS) approvals. The monitor was responsible for recording take during marine construction of a new set of floats and pier being constructed for moorage of two Coast Guard Fast Rescue Cutters. The work also included monitoring during vibratory removal of over 200 pilings that supported a 1,500 foot fixed pier. Monitor was responsible for monitoring level B take for harassment of marine mammals and Level A take which required shut down of work to allow the marine mammals to leave the area to prevent potential harm.

Daniel Wahl

(510)-460-0018 Danielhwahl@gmail.com Astoria, OR 97146

EDUCATION

Graduated 06/2022 B.S in Environmental Sciences, Option in Aquatic Biology

GPA: 3.77

B.S in Earth Sciences, Option in Ocean Sciences

Oregon State University - Corvallis, OR

Microsoft Office Suite

R & R Studios

Ocean Data View

ArcGIS Pro

Google Drive

SKILLS

- Statistical Analysis
- Data entry
- Project management
- Grant Proposal writing
- Conservation plan
 writing

RELEVANT WORK EXPERIENCE

08/2022-Present

Fisheries Observer

Saltwater Inc. – Astoria OR

- Provided independent catch estimates of target species and bycatch aboard commercial fishing vessels
- Sample species composition.
- Provide fish ID and measurements.
- Collect biological samples.
- Monitor marine mammal and bird interactions.
- Document fishing activity (set times, positions, gear performance, etc.).

03/2022-07/2022

Marine Research Technician

Hatfield Marine Science Center, Under NOAA Climate and Fisheries Adaptation Program – Newport OR

- Microbomb calorimetry to determine spatial patterns of energy density Dungeness crab larvae, and to supplement predictive fisheries models forecasting stock successes in the PNW
- Marine organism drying, weighing, and identification
- Data comparison and addition within large relational NOAA database from previous JSOES surveys to determine if the energy density of Dungeness crab larvae is correlated with environmental conditions
- Built Predation Event Recorders (PERs) in collaboration with NOAA to gain insight on Salmon predators

- Conservation planning
 - Restoration management
 - Microscopy
 - Literature review
 - Research at sea

01/2021-09/2021

Undergraduate Researcher,

Fisheries Oceanography Lab – Corvallis, OR

- Statistically analyzed bycatch and NOAA fisheries survey data to understand spatial and temporal overlap with vulnerable rockfish
- Created plots and maps of temporal and spatial abundances of Pacific Hake to determine overlap with vulnerable rockfish species and prevent bycatch

RELEVANT EXPERIENCE

06/2022	 Juvenile Salmon & Ecosystem Survey (JSOES) on R/V Frosti, NOAA – Astoria, OR Sample juvenile salmonid populations to strengthen correlations between ocean conditions and the distribution, abundance, and survival of juvenile Columbia River (CR) salmon in the Northern California Current (NCC) nearshore ecosystem Learn aquatic biology research techniques at sea; sorting, identification and preservation of biological samples
04/2021	 Newport Hydrographic Survey on R/V Elakha, Hatfield Marine Science Center - Newport, OR Retrieved zooplankton and micronekton to understand and predict how organisms are affected by environmental conditions on the continental shelf Performed CTD casts and retrievals, vertical net tows, and Bongo net tows at 1 nautical mile (nm), 3 nm, and 5 nm from shore Filtration and preservation of chlorophyll
03/2022	 Research Cruise on R/V Sally Ride, Oregon State University- La Jolla, CA Collected, extruded and preserved sediment cores to understand the cycling of natural organic matter in marine environments CTD casts and retrievals and vertical net tows for chlorophyll and plankton to understand how ocean conditions affect marine productivity

ERICA LONG-BOBIAN | Biologist

1019 SW Ridge Rd | Warrenton, OR, 97146 | (503) 791-0741 | <u>erica.long0741@gmail.com</u> *Committed to promoting stewardship of fisheries and wildlife.*

EXPERIENCE

Fish Biologist/Data Technician

April 3, 2023-June 14, 2023

Seasonal (Spring) Full-Time Contractor with Ocean Associates, Incorporated – 4007 N. Abingdon Street. Arlington, Virginia 22207 Supervisor – Matt Morris | (503) 812-0679 | mattmorris@oceanassoc.com (OK to contact)

Estuary Pair Trawl Project – Contracted by NOAA Fisheries; funded by the Corps of Engineers *The Pt Adams Research Station/Northwest Fisheries Science Center, Hammond, OR*

- Monitor movement of juvenile and adult salmonids during out-migration in the Lower Columbia River estuary (Westport Slough)
- Operate a PIT-tag detecting system using an antennae matrix attached to a trawl net to be used for entering raw data files to the regional database (PTAGIS)
- Oversee and troubleshoot antenna health and performance with a multiplexing transceiver system (MiniMon, BioStat)
- Complete daily data entry, summaries, figures and tables
- Required to understand tides, current systems, and natural history of salmonids in the estuary
- Assisted as a deckhand and worked in inclement weather
- Completed the NOAA Small Boat Operators certification course

Wildlife Rehabilitator

Full-time

Previous Wildlife Care Center Volunteer & Intern

Wildlife Center of the North Coast – 89686 Hwy 202, Astoria, 97103

Supervisor – Ginger Nealon | (703) 999-1780 | <u>ginger@coastwildlife.org</u> (OK to contact) Responsibilities include overseeing the day-to-day operations of the facilities:

- Rehabilitation of native birds and mammals
- Conduct patient intakes, medical examinations, treatments
- Anesthetize and monitor wildlife
- Microscopy (parasites) and analysis of blood draws
- Daily data entry using WRMD database and writing reports
- Plan and construct wildlife enclosures, using carpentry tools
- Train interns and volunteers
- Perform routine maintenance on aquatic systems
- Assign medications according to protocol and administer fluid therapy

June 2021-Present

September 2020-June 2021
- Perform detailed necropsies
- Respond to wildlife calls from the public, local law enforcement, and government agencies
- Capture and review radiographs on both sedated and conscious wildlife patients
- Maintain trails and overgrown enclosures using landscaping tools
- Inform volunteers and the public of zoonotic pathogens and prevention methods

EDUCATION

Southern Oregon University

Bachelor of Science – Biology (2019)

Areas of concentration: Aquatic ecology, microbiology, animal physiology Independent Research Projects:

- "Comparison of age-related deterioration of negative geotaxis in Drosophila melanogaster on a sucrose and curcumin supplemented diet" Dr. Brie Paddock, Advanced Animal Physiology Winter 2019
- *"Examination of the Eutrophication of Long Lake"* Dr. Michael Parker, Aquatic Ecology Spring 2018

Relevant coursework:

Conservation Biology	Aquatic Ecology	Physics
Biogeochemistry	Microbiology	Bio & Organic Chemistry
Mammalogy	Animal Behavior	Advanced Animal Physiology

COMMUNITY ENGAGEMENT IN CONSERVATION

Oregon Shores - Coastwatch Conservation Coalition

- Entered the "Adopt a Mile" program on behalf of the Wildlife Center of the North Coast as part of a self-directed initiative to start a volunteer collaboration quarterly event

Portland Audubon Black Oystercatcher Nest Monitor

- Monitor the threatened shorebirds throughout the nesting season at Indian Beach, Chapman Point, and Ecola State Park in Cannon Beach, OR
- Weekly hikes to access remote nests
- Document foraging behaviors, nesting/brooding, predator interactions, and human related disturbances in an online survey database
- Provide fieldwork support for protective reserve site designation efforts for the Rocky Shore Management Strategy to submit to the Land Conservation and Development Commission

May 2023 - Present

June 2023 - Present

North Coast Land Conservancy Volunteer

- Stewardship on NCLC land reserves
- Planting native species to encourage repair in damaged riparian/wetland zones due to human land use
- Assist in projects to support the return of native species, such as preparing and spiking willow stakes for new beaver habitat
- Removal of invasive plants and other habitat contaminants
- Newsletter mailing campaigns and general outreach

SKILLS & ABILITIES

Field Skills

- Knowledge of physical, chemical, and biological properties of aquatic environments
- Identification of taxonomic and functional groups in aquatic ecosystems
- Basic carpentry and landscaping
- First-Aid-certified
- NOAA Small boat operator certified
- Proficient with canoes, kayaks, and rafts
- Adept at working and communicating in the field
- Comfortable hiking up to 7 miles in variable weather and terrain
- Able to lift and carry up to 50 lbs
- Geographical familiarity with the Pacific Northwest region

Laboratory/Office Skills

- Multimeter, colorimeter, flow cytometer, flow meter, GPS
- Microscopy and analysis
- Medical equipment (anesthesia machine, ophthalmoscope, centrifuge, refractometer)
- Radiography certified
- Proficient with database and document software (e.g Word, Excel, Acces, etc.)

Wildlife Skills

- Strong identification of native/non-native PNW birds, mammals
- Interest in further developing fish and plant identification
- Excellent capture and restraint of birds (all sizes) and small mammals
- Trap grids for small mammals
- Rabies pre-exposure vaccination

REFERENCES

Ginger Nealon | Wildlife Rehabilitation Coordinator | Wildlife Center of the North Coast (703) 999-1780 | ginger@coastwildlife.org

Jeff Scroup, Boat Operator, Pair Trawl Project | Ocean Associates Contractor (503) 338-9294 | <u>gamesarge70@hotmail.com</u> Former Oregon State Police Sargent

Jen Zamon, PhD | Research Fishery Biologist | NOAA Fisheries (503) 739-1055 | jen.zamon@noaa.gov

Kara Jaenecke | Fisheries Biologist | Contractor with Ocean Associates | NOAA Fisheries/NWFSC/Fish Ecology Division at the Point Adams Research Station (585) 406-6278 | <u>kara.jaenecke@noaa.gov</u>

Michelle Rub, DVM | Fisheries Biologist | NOAA Fisheries; Veterinarian | Columbia Veterinary Hospital (503) 338-0694 | michelle.rub@noaa.gov

JONATHAN CALLEJA

(480)-285-9658 • jonathancalleja789@gmail.com • Astoria OR

EXPERIENCE/COURSEWORK

Student Research Assistant - University of Alaska Southeast

1/22-4/22

Supported and funded by animal physiology and chemistry professors to pursue independent research on southeast Alaska ocean acidification and temperature changes in the intertidal zone affecting molluscs.

- Husbandry of tanks with live specimens which includes: cleaning tanks, feeding, and recording data
- Process data for cooling points and lethal temperatures
- Communicate findings and report back to mentor each week

Animal Physiology - University of Alaska Southeast

Gained a firm understanding of the physiological processes driving animal function from the cellular to the organismal level. Current research techniques and conservation issues were covered.

- Comparative and theoretical approach to understanding processes such as neurophysiology, metabolism, endocrinology, osmoregulation, muscle physiology, respiration and circulation
- Considered both anatomical and functional differences in physiological structures in vertebrates and in invertebrates.
- Learned to understand the physiological mechanisms that adapt an organism to a particular environment

Ecology - University of Alaska Southeast

Focused on the physical, chemical, and especially biological features and interactions that determine the distributions and abundances of organisms. Designed, conducted, and completed an ecology research project.

- Articulated the physical, chemical, and biological features that determine the distributions and abundances of organisms
- Described ecological interactions at the individual organism, population, community, and ecosystem levels
- Conducted research and presented experimental findings in an educational setting

WORK EXPERIENCE

West Coast Groundfish Observer/Catch Monitor, Saltwater Inc. Astoria OR03/23-presentThird party eyes for fisheries management. Handling prohibited species for NOAA and ODFW.03/23-present

- Data collection and data entry
- Long hours outside
- Monitoring discarded fish at sea and total catch on land for fisheries management

Chemist, Apex Systems/P&G, Phoenix, AZ

Responsible for testing on raw and finished product at the Phoenix P&G Plant.

- Learning several different chemistry tests and protocols
- Manage quality of finished product
- Manage audit trails to maintain a high standard of quality

Ad Manager, University of Alaska Southeast, Juneau, AK 1/21-4/22 Responsible for selling of all advertisements for the UAS student newspaper: The Whalesong

- Sell advertising space on newspaper to clients
- Manage quality of advertisements which includes: resolution checks, placement of ads, • previewing and suggesting edits prior to publishing
- Manage phone calls and emails to clients in accordance with monthly deadlines

Peer Advisor, UAS Student Services, Juneau, AK

Provided continuous customer service and functioned as the first point of contact for students, faculty, and the general public. Office responsibilities included: setting up appointments with staff members, handling confidential personal information, and multi-line phone skills.

- . Handled all general inquiries via phone and email professionally and in a timely manner
- Managed schedules of the office and scheduled appointments for students •
- Handled confrontational situations and special requests from students effectively

Student Ambassador, UAS Recruiting Department, Juneau, AK

9/19-12/20 Responsible for encouraging prospective students to come to UAS and handled tours around campus that lasted up to two hours at a time.

- Gave tours to individuals and groups of the campus several times a semester
- Made phone calls to prospective students
- Managed a delegated email for general questions and prospective students
- Assisted with recruiting events

Head Dietary Server, The Citadel Senior Living Community, Mesa, AZ 3/18-7/19

Served food to residents as well as managed new employees and dealt with resident confrontational situations.

- Served food to assisted living residents and independent living residents
- Responsible for training for new employees
- Followed up with required kitchen clean up
- Interacted with residents as well as handled complaints
- Established relationships with staff, residents, and family members

EDUCATION & CERTIFICATIONS

5/22-10/22

8/21-12/21

University of Alaska Southeast, Juneau, AK

- Bachelor of Science Marine Biology
 - Marine Vertebrate Field Research and Conservation course conducted in Algarve, Portugal (*May 4-13, 2022*)
- Advanced Open Water Scuba certified

Kayla Walser

Walser62801@gmail.com | 816-632-0256 | Cameron, MO 64429

Summary of Qualifications

- 3.5 years of customer and guest experience positions
- 4 years of husbandry experience with land and marine animals
- Clearly communicates and infers with guests and co-workers
- Extensive knowledge and expertise with Microsoft office applications
- Experience with handling sensitive and confidential documents

Education

Bachelor of Science: Marine Biology

Northwest Missouri State University, Maryville, Missouri

Related Experience

West Coast Ground Fish Observer

Saltwater Inc., Astoria, Oregon

- Monitor west coast fisheries and insuring that the rules and regulations in place are being followed

- Extract biological samples from fish including length, weight, and sex and tissue samples including fin clips and otolith extractions

Shop Associate

Missouri Star Quilt Company, Hamilton, Missouri

- Increased store sales through engagement with customers, suggestive selling and sharing product knowledge

- Ensured all products are displayed properly to ensure everything is organized and visible

Desk Assistant

March 2023 – Current

August 2019 – December 2022

December 2022 – March 2023

Northwest Missouri State University, Maryville, Missouri

August 2020 – Present

- Responsible for commutations with a wide variety of stake holders
- Facilities essential items for dorm living

Research Assistant

University of Southern Mississippi, Ocean Springs, Mississippi June 2022 – July 2022

- Participated in group collection of marine species
- Identified fish and zooplankton in the Gulf of Mexico

Resident Assistant

Northwest Missouri State University, Maryville, Missouri August 2020 – October 2021

- Contributed to the social, academic, and personal adjustment of students to the residence hall and University

- Arranged and executed activities to build relationships for dorm students

References

<u>Kurt Haberyan</u>

- email: khaber@nwmissoui.edu
- phone: (660) 562-1568

James Campbell

- email: jhcamp@nwmissouri.edu
- phone: (660) 562-1192

<u>Kurt Dickkut</u>

- email: <u>kdickkut@cameronschools.org</u>
- phone: (816) 351-3059

Activities

Nodaway Human Society

August 2019 – Present

- Provided husbandry for dogs and cats by walking and providing stimulation for the animals

- Trained to identify some parasites associated with cats and dogs of all ages

Marine Biology Society

August 2019 – December 2021

- Took field trips to Omaha's Henry Doorly Zoo and Kansas City's Sea Life Aquarium

Residential Hall Counsel

August 2020 – December 2021

- Collaborated in meetings working towards improving the residential halls

Kristine De Wilde

+1 541 668 5890 dewildestkri@gmail.com Hammond, OR Willing to relocate anywhere Authorized to work in the US for any employer

Summary

Enthusiastic post Biological Sciences graduate with 2 seasons experience with the United States Forest Service and several years experience in horticulture. Good botanical identification skills, including experience using dissecting microscopes and dichotomous keys. Excellent team participation skills and attributes, including collaboration, reliability, flexibility, clarity, commitment and respect.

Work experience

Farm Manager

High Stepp Agriculture - Grants Pass, OR

May 2019 to May 2022

- Administered planting and cultivations of crops.
- Experience with installation of timed irrigation and greenhouse watering systems.
- Practiced safe working practices individually and as a team leader.
- Instructing staff on how to perform their work duties and how to adhere to health and safety regulations.
- Survey and collect seed crops, isolate female flowers to prevent pollination, collect pollen, and conduct controlled pollination.
- Working with the farm's upper management to prepare budgets and fiscal reports.
- Examine plants for common insect and disease problems and takes action to minimize damage.

Biological Science Technician (Plants)

United States Forest Service - Jacksonville, OR April 2019 to November 2019

- Identified, surveyed, collected data, and treated invasive non-native plants in several districts of the Rouge River Siskiyou National Forest.
- Use safety equipment, pesticide applications and biological controls as needed.
- Identified and conducted surveys for numerous rare plant species.
- Performed highly physical labor and daily hiking to remote locations in rugged terrain under adverse weather conditions.
- Lead a youth crew in the identification and removal of invasive and noxious plant species.
- Firefighter type 2 with prescribed fire and active wildfire experience.
- Effectively communicated with co-workers, civilians, and other firefighters to ensure safety and productivity.

Forestry Technician (National Visitor Use Monitoring)

United States Forest Service - Bly, OR April 2018 to November 2018 NATIONAL VISITOR USE MONITORING

- Contacted visitors to provide information about recreation regulations, opportunities and current restrictions.
- Performed surveys and studies of existing dispersed and developed recreation facilities and their present use and demand.

- Operated a 4-wheel drive vehicle on all types of roads.
- Follow check in and check out procedures for safety and accountability.
- Conduct interviews for six hour time frames in a professional manner, using respectful and friendly introductions, followed by a well communicated and polite script in order to collect data on recreation experience on the forest.
- Knowledge of standard forestry practices, including those related to recreation, botany and wildland forest fire.

BOTANY

- Conducted contract inspections after invasive plant treatments were completed to assess the efficacy of the treatment.
- Preformed a variety of duties related to implementation of on the ground noxious weeds and invasive plant control.
- Utilized botanical taxonomic keys to key out invasive plants.
- Surveyed for white bark pine in project areas.
- Collecting and recording of data relative to invasive plant sites.
- Collected GPS data with a hand-held Garmin unit.

Geophysical Field Operative

GeoXplor Corp. - Anthem, AZ August 2017 to October 2017 Exploring, mapping and developing sites for mineral extraction.

- Carrying out initial surveys, risk assessments and environmental impact assessments on potential sites to assess whether plans are workable.
- Managing the mobile transmitter; responsible for generating a wide range of frequencies for precise data acquisition.
- Staking survey sample locations (on both quad and foot), displaying expert GPS navigation skills.
- Undertaking exploration work, such as taking samples and recording results.
- Mobilized (and demobilized) the StrataGem instrument at each survey site, in addition to acquiring data and debugging console problems.

Waitress

Immersion Brewing - Bend, OR April 2016 to August 2017

- Provided individualized customer service to restaurant patrons.
- Took food orders, prepared drinks, provided conflict resolution; Maintained knowledge of current menu items, garnishes, ingredients and preparation methods.
- Great attention to detail; quick thinking, team player.
- Handled money

Education

Bachelor's degree in Major: Science Minor: Biology

Portland State University - Portland, OR June 2021 Associates of Science and Art Degree in Science and Art

Associates of Science and Art Degree in Science and Art

Central Oregon Community College - Bend, OR 2009

KELSEY NELSON

1026 Grand Ave, Astoria, OR 97103 (503) 812-8776 <u>kcn@uoregon.edu</u>

Through my participation in various activities and work experiences, I have learned how to successfully work on a team, as well as being fully capable of working independently.

EDUCATION

 Bachelor's Degree in Marine Biology; Environmental Studies minor and Art minor (University of Oregon - Graduated August 2020)

EXPERIENCE

ASTORIA CO-OP

LEAD BAKER – OCTOBER 2022 - CURRENT

- * Responsible for daily production of various baked items to be sold at the Astoria Co-Op
- * Collaborate with other kitchen members on creation of new items
- * Help with general kitchen prep once daily baking is completed

WILDLIFE CENTER OF THE NORTH COAST

SEASONAL WILDLIFE REHABILITATOR – JUNE 2022 - SEPTEMBER 2022

- * Assist Rehab Coordinators with daily clinic tasks and patient care
- Responsible for running the center on days when Rehab Coordinators are not present

 patient intake and ongoing medical care, delegating tasks to volunteers, answering and returning
 calls, coordinating patient transport, overall clinic upkeep

BRIDGEWATER BISTRO

LEAD BAKER – SEPTEMBER 2020 - SEPTEMBER 2022

- * Solely responsible for the baking of breads, desserts, unique specials, and other menu items
- Training new hires

OOLONG BAR

TEA BARISTA – SEPTEMBER 2019 - MARCH 2020

- * Responsible for running tea shop; every shift performed solo
 - Took and prepared orders accurately and in a timely manner
 - Opened and closed tea shop; responsible for documenting till and dispersing tips appropriately
 - Answered guests' questions and helped them choose teas from our extensive menu
- * Created and baked daily cakes for retail

WILD DUCK CAFÉ

PREP COOK/CATERING TEAM MEMBER – AUGUST-DECEMBER (2018)

- Prepared a variety of menu items
- * Responsible for prepping ingredients to be used in various dishes
- * Assisted chefs on the line when needed

* Set up and carried out catering events associated with Autzen Stadium suites; responsible for one of two cold kitchens

BIG WAVE CAFÉ PREP COOK – SUMMER OF 2017

- * Responsible for prepping ingredients to be used in various dishes
- * Prepared a variety of menu items
- * Assisted chefs on the line when needed

TWIN ROCKS FRIENDS CAMP & CONFERENCE CENTER HOUSEKEEPING & FOOD SERVICE ASSISTANT – JUNE 2013-AUGUST 2016

- * Prepped meals and occasionally assisted with the scratch baking of breads, cakes, and cookies
- * Worked in the dish room
- * Often appointed "Closing Captain"

- Responsible for leading a crew in the process of cleaning and closing down the kitchen and dish room for the night

* Often appointed "Cleaning Captain"

- Head of a crew of housekeepers who were responsible for the cleaning of certain facilities and areas in a timely manner

* Worked in all aspects of housekeeping

ACCOMPLISHMENTS

 Conducted field research in Big Sur, California (Summer 2017) as well as in Thailand and Indonesia (Winter 2019)

REFERENCES

- Ginger Nealon
 Occupation: Rehab Coordinator at Wildlife Center of the North Coast
 Phone: (703) 999-1780
- Geoff Gunn
 Occupation: Executive Chef at Bridgewater Bistro
 Phone: (503) 440-4295
- Ann Kischner
 Occupation: Past Owner of Bridgewater Bistro Phone: (503) 791-1055

Keeley Rideout

+1.425.359.9892 • keeley.rideout@gmail.com • Snohomish, WA U.S.A. + International

I am a hardworking, creative, and enthusiastic scientist passionate about conservation, research, and exploring the human-environment interface.

Education: University of Colorado Boulder

Skills: GIS, BRUVS + DOVS Analysis, Fish ID, Basic R, Sailing, Diving, Small Boat Handling, Water Chemistry, Videography, Blogging, Wilderness Medicine, Ethnographic Research Languages: English, Spanish (nearing fluency)

Certifications: WEMT, PADI Rescue Diver & Research Diver, IYT Sailing Crew, LNT Trainer

Work & Volunteer Experience

Freelance GIS Consultant (2014-2021)

• Collect and analyze geospatial data to produce maps. Construct data visualizations with QGIS and ArcGIS. Provide step-by-step instruction based on clients needs

Guide, Rainier Mountaineering Inc. (2021)

• Lead clients on alpine expeditions up Mt. Rainier and cascade volcanoes. Teach basic mountaineering techniques; self arrest, crampon use, crevasse rescue. LNT Trainer

Avalanche Instructor, Utah Avalanche Center (2021)

• Teach Avalanche Rescue and Backcountry 101 programs in the Wasatch mountains. Instruct snow pack analysis, backcountry decision making + navigating, proper rescue techniques and beacon, shovel, probe use.

Ski Patrol, Park City Mountain, Utah (winters 2017 – 2021)

• Provide quality emergency medical care for injured patrons. Conduct snow science and snowpack analysis for avalanche hazard mitigation

Field Instructor, Wilderness EMT, Global Expeditions Group (2016 - 2019)

- Lead and organize high school service learning + environmental education programs in Iceland (2018, 2019) China (2017) Australia (2016) & Thailand (2016)
- Logistics & planning, curriculum development, medical care, team growth exercises, sailing & scuba diving instruction, photography & blogging

Sharks & Fisheries Analyst, Charles Darwin Foundation, Galapagos (Apr - Oct 2018)

- Analyze diver operated stereo-video station (DOVs) footage, deploy and retrieve acoustic monitors for tagged sharks around Galapagos, equipment maintenance
- Map longline bycatch and target species for 2013 Galapagos fisheries study
- Develop education and outreach project for local high school students
- Edit short film on Women in STEM

Cast Wrangler/Medical Support, Panoramic Journeys + ITV, Mongolia (Sept – Nov 2017)

• Logistics for a U.S. based reality TV show set in remote Mongolia. Provide medical & emotional support for cast members returning from extended stay in wilderness

Keeley Rideout

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Work & Volunteer Experience Continued

Geographer, Ger Community Mapping Center, Ulaanbaatar Mongolia (Aug – Nov 2017)

• GIS analysis, cartography, graphic design, infographics, research, photographer, program planning, logistics & outreach

Refugee Camp Coordinator, Drops in the Ocean, Chios, Greece (Jan – May 2016)

- Map facilities access within camp (sanitation, health, food, immigration support)
- Manage warehouse, train volunteers, organize non-food item distributions
- Develop and implement community engagement programs. Prepare and distribute meals. Help with individual advocacy, medical assistance, and videography.

GIS Analyst & NSF REU fellow: Bermuda Institute of Ocean Sciences (Sept – Dec 2014)

- Deploy Baited Remote Underwater Video Stations (BRUVS), process BRUVS footage with SeaGIS EventMeasure software, map the fish assemblages of the mesophotic zone around Bermuda, spatiotemporal analysis of biogeophysical parameters, identify species of interest to lowest taxonomic level.
- Oceanographic research vessel and small boats operations

NSF Intern, Lab for Conservation Biogeography – University of Nevada (Jun – Aug 2014)

- Identify pika habitats an behaivioral characteristics, assess climatic impacts throughout the Great Basin spatiotemporal data analysis with R and QGIS, vegetation sampling, extant v. extirpated field surveys
- Videographer & Producer ProjectHEAT, middle school STEM outreach program

Snow Hydrology Internship Leader, CU Boulder (Jan – May, 2011 – 2013)

- Lead undergraduate interns up to Niwot Ridge Long Term Ecological Research site
- Teach snow safety, snow chemistry, field procedures, backcountry skiing
- Snow pack analysis for Green Lakes Valley Watershed